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ORIGINAL ARTICLES.

TREATMENT OF INFLUENZA IN CHILDREN.*

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Prophylaxis.—Is there anything like a preventive of influenza? There is, contrary to Berger (Die Infections-Krankheiten, 1896), and others, no infectious disease of equal communicability, either direct or indirect. Under extraordinary circumstances only is there a possibility of avoiding contact. Influenza may be prevented from entering a ship coming from distant ports, or a ship carrying it may be quarantined with rather more theoretical than practical effect. Influenza may be kept out of a monastery or a prison or out of an insane asylum or barracks if there is no intercourse with the rest of the world. It should be kept out of a sanitarium for lung diseases by strict isolation during an epidemic. Indeed, I know of no infectious disease that creates a greater disposition to tuberculosis than influenza. To close a school is unavailing, for the children will contract the disease outside. Expectorated mucus and the result of sneezing should, if possible, be caught and disinfected or destroyed; tools, toys, towels, handkerchiefs, and linen should be treated, *i. e.*, washed and disinfected as in other contagious maladies. To protect the children of a household the patient should be isolated on the upper floor of the house, a demand with which it is impossible to comply in the larger part of our population. Nurslings, if their mothers be sick, should meet them for nursing only. Sick and well children should use disinfectant mouth-washes. I think water slightly acidulated with hydrochloric acid will do best. Drinking-water should also be acidulated in the same manner and may have the same favorable result that is obtained in Asiatic cholera. The irrigation of the nose should be a matter of course in the well and in the sick, for the same reasons that have been urged by myself and very persistently and forcibly by Dr. A. Caillé against and during diphtheria. In this way mucus, which according to Ruhemann catches bacilli as in a net, is removed and the mucous membrane is kept in a healthy condition. In which way the bacillus enters is not entirely clear; if it invades through the mucous membrane like the pathogenous bacilli of tuberculosis or diphtheria or cholera, the more normal the condition of the mucous membrane, the greater is the protection.

Medicinal preventives have been recommended —cod-liver oil by Ollivier; calcium sulphide by Greene; quinine by many. Trials with it made on regiments of soldiers under control in their barracks were equally positive or negative. My experience with preventives is very small. Quinine appeared to cause headache and nausea.

Treatment.—There is no specific for influenza like quinine for malaria or salicylic acid for rheumatism. Innocent muriate of ammonium, also carbonate of potassium, sulphocarbolate of sodium, carbolic acid, ichthyol, and other remedies have been so recommended without the expected success. Thus, rational, hygienic and symptomatic and sustaining medicinal treatment only can be considered. A purgative dose of calomel should be given in order to clear the bowels of microbic and toxic ingesta, the bowels appearing to be the principal point of attack in young children. The patient should be kept in bed, the temperature of the room at 70° F. or more at first, the diet should be scanty and fluid at first—milk, cereals, farinacea, water, lemonades, and broths. The further development of the case will gradually indicate eggs, and perhaps—in a few selected instances only—alcohol in addition to other medicinal stimulants. It is more, however, a slow convalescence that requires it than the course of the disease itself. In this respect it appears to differ somewhat from other infectious diseases, particularly typhoid fever and diphtheria. In the latter the doses of alcohol should be high from the beginning.

If there be a high temperature, cold water is not indicated either as a bath or as a pack. The irritating cough which often requires opiates is rather increased than soothed by it; the characteristic bronchitis of influenza does not bear it; the frequent copious perspiration contraindicates it and so does a weak heart under all circumstances. On the contrary, when there is much muscular pain and restlessness, a warm bath is often beneficial. Hot baths should be avoided unless a very short one in an occasional collapse, and Turkish baths require stronger heart-muscles than we are apt to meet in pronounced cases of influenza. While many common cases of pneumonia, with fair circulation, are apt to do well with cold packs, influenza pneumonias do better with warm ones.

According to Ditmar Finkler of Bonn quinine occupies a front rank.[1] Out of eighty of his patients treated with quinine only three made their appearance at the dispensary a second time, while of those treated with other drugs nearly one-half reappeared twice or more frequently. The favorable action of this drug has been observed by Dujardin-Beaumetz, Teissier, Carrière, Pribram

*Part of a paper read before the Medical Society of the County of New York, November 26, 1900.

and others. Mossé, to abort the disease, administered 1.0-1.25 grams the first day, sometimes also the second. Filatow has also observed its favorable effect especially in children. Others, however, as Eichhorst, Tranjen and Bowie, had no success in the use of this remedy, and Leichtenstern believed that the cases treated with large doses of quinine did worse than those that were not so treated. In the German collective investigation reports some praised quinine as giving brilliant results while others were greatly disappointed in its effects.

Whenever vomiting is severe, stomach feeding is out of the question. The temporary abstinence and afterward rectal alimentation find their indication. Alcohol greatly diluted, peptones, mild salt solutions, and liquid albumins are readily absorbed in the colon which even in the smallest infant, though the fetal length of the sigmoid flexure may be persistent, is made accessible by elevating the hip and moderating the current by not raising the irrigator more than a foot above the anus. Peptonized milk, egg and broths are absorbed in part. Starch in the injection is dextrinized in the colon and thus adds to the nourishment of the enema, but though water alone were injected it would add to the circulating fluid. That is why even a large enema given for the purpose of clearing the bowels may add to nutrition and strength by such of the injected water as is almost invariably retained. Thus, severe vomiting should be treated with refusing to feed through the stomach. The best relief is given by morphine, rarely by ice, either internally or externally. It is not necessary to send morphine down to the stomach; absorption is easy and more readily accomplished in the mouth or throat. A tablet of one milligram may be thrown into the mouth of a child of two or four years, there to be absorbed, or half a drop or one drop of Magendie's solution may be administered in the same manner without dilution.

The indications for the treatment of influenza may be several, the high temperature in many cases, the great discomfort, the restlessness, and the rapidly increasing exhaustion. In the treatment of many fevers it is their causes that require consideration;[2] in others, however, their relations to, and influence on, the body are the main considerations. When the condition of the latter is fair, and no danger is incurred on account of the fever, it should be left alone; when the rise of temperature, however, by itself is injurious, it should be interfered with. At all events the treatment of the symptom "fever" gives us no hope of shortening the disease in which it occurs or of which it forms a part; on the other hand, it is a satisfaction to know that, while we increase the comfort and diminish the immediate dangers, the natural healing process is not disturbed. In this way both the justification and the limitation of the so-called expectant treatment become evident. To allow a high temperature to deteriorate tissues and exhaust the heart or brain, is as injudicious as is the custom of emphasizing the number of degrees of Fahrenheit as the only valuable part of a morbid process. To be satisfied with depressing temperature is a grave mistake, but to allow pneumonia to run its deleterious course of high temperatures unchecked with their full influence on the rapidity of respiration and the action of the heart and on the increase of waste, is equally injudicious.

In their injurious influence on nutrition protracted infectious fevers act, first, like direct losses or like starvation, and, secondly, as immediate poisons. The younger the patient, the greater is the danger from that source. That is why a high temperature without any or with a trifling remission should not be allowed to last, though its immediate effect may not appear very ominous. When a high temperature results in a convulsion we never hesitate to reduce it; here we admit there is a vital indication. Why, then, not reduce it while there is the danger of a possibility or probability of its occurrence? Add to these facts the disposition of the young to inanition which is caused by two main factors. The first is their rapid metabolism, the second and principal one is the relative, almost universal, insufficiency of the young organism.

Moreover, we should not forget that most of our antipyretics are at the same time nervines, analgesics and diaphoretics, thus improving comfort and metabolism. They are surely indicated when bathing is not sufficiently efficient or when baths are contraindicated; in that case they may act as adjuvants, as combinations, and procure sleep and remissions. If I add that there are, however, contraindications to the use of medicinal antipyretics because of possible idiosyncrasies and of the debilitating effects which many of the antipyretic drugs are apt to exhibit, I merely say what all have experienced, and what everybody should remember, *viz.*, that no degree of Fahrenheit and no Greek name of a morbid process are the subjects of our medication, but an individual patient. From these points of view our fever remedies should be judged.

In my paper of 1890[3] I said that acetanilid ought to be preferred among the poor because of its low price, antipyrin mainly where great solubility was required for the purpose of its administration in rectal and subcutaneous injections, and that phenacetin was preferable to either when it could be given by the mouth, because of its less uncomfortable effect on the brain, the heart, and the skin.

This opinion I have to modify to a certain extent, not that I object to what I said of phenacetin, but acetanilid should never have an opportunity to show what good qualities it may have, in the rich or poor. It should not be used at all, under any circumstances, not even in the quack preparations which now and then I know to disfigure the prescriptions of regular practitioners. Being a derivative of anilin, acetanilid is poisonous. Not only has it a sedative or rather paralyzing effect on the central nervous system, but it destroys the blood and causes anemia by changing hematin into methemoglobin, though given

sometimes in small doses. That is what gives rise to cyanosis so often observed, more often than after the administration of any other of our modern analgesics and antifebriles. The poisonous effect is even noticed when the drug is used externally, mainly on the young. Examples of such cases were reported at the meeting of the Philadelphia Pediatric Society, April 11, 1899.

Antipyrin when employed during normal conditions increases the tension of the pulse and blood pressure—therefore it is contraindicated in hemoptysis—and produces perspiration. It works more on the general central nervous system than on the center of circulation, that is why it acts—while being antipyretic—as a sedative and analgesic. But it should not be considered as a nervine, for its action appears to be *ushered in* through the mediation of the blood and blood-vessels. The body temperature begins to decrease within fifteen or twenty minutes after the first dose; to render its antipyretic effect more tangible and persistent, it should be followed by a second within two hours. This rule, however, does not hold good when the drug is given for its sedative or analgesic or for its slight antirheumatic effect. Its general effect is mostly good, but its undesirable effects are many. Otto Seifert[4] quotes eighty authors of note who report disagreeable effects of antipyrin; they were observed in the gastro-intestinal, nervous and circulatory system, in the skin and in the mucous membranes. Phenacetin is dismissed with ten. It resembles acetanilid, but is very much milder in its effects. The transformation into methemoglobin takes place after large doses of several grams only. Half-gram doses for antipyretic, gram doses for analgesic purposes are recommended. The doses to be given to infants and children should be from fifteen milligrams to three centigrams (gr. ¼-½).

Salipyrin, the salicylate of antipyrin, is employed by Finkler. While antipyrin causes perspiration, sometimes excessively so, he reports a case in which hyperidrosis was instantly cured by salipyrin. It should be given in twice the doses of antipyrin, is usually better tolerated than the latter, particularly by neurotic or neuralgic patients, because of the relative absence of accidental effects.

Salophen is extolled by Drewes of Hamburg who prefers it to salicylic acid and to salicylate of sodium, mainly in the nervous form of influenza. Adults took from one to six grams, children from three to five decigrams. Finkler, who quotes him, adds: "I believe that most physicians have arrived at the point where they would not like to be without these preparations in influenza, but it should certainly not be forgotten that reports of this kind have quite frequently been used for advertising purposes."

There is something else that should not be forgotten, *viz.*, that there is hardly a disease which has as great a tendency to cause exhaustion and numerous other nervous symptoms, from languor to heart failure, as influenza. If there be the slightest indication of such a danger, none of the above-mentioned drugs should be given without the addition of a stimulant. That should, according to what I said before, rarely be alcoholic. Caffein preparations are vastly preferable; mainly the salicylate (or benzoate) of sodio-caffein, which, being very soluble and readily absorbed, is almost ideal in its effect. That is why in emergency cases of heart failure its subcutaneous administration may often become indispensable. The use of strychnine is so well understood and so general that I limit myself to merely mentioning it.

To what extent stimulants should be given in the average or in the grave cases depends on the general condition of the patient, and on his medical adviser's knowledge of his former health and his resisting power. It is probable that in most cases some daily doses of sulphate of spartein, five centigrams (gr. 5/6) for a child of two years, will have a favorable effect. The caffein preparation I mentioned may be given in doses of from two to six decigrams (grs. iij-x) daily. When it appears to act as an excitant on the brain, it should be replaced by camphor in daily doses of from one to four decigrams. All these doses, however, should be much increased when strong stimulation is required, and in an emergency subcutaneous injections of the same drugs should be used, caffein being soluble in two parts of water and camphor in four parts of sweet almond oil.

One of the best stimulants, useful in the gravest of all cases which are attended with collapse and heart failure, is sadly overlooked among us, *viz.*, Siberian musk. I know of nothing better in the most urgent of cases. A child of two years should take of the 10 per cent. tincture five to ten minims every half hour until half a dozen or a dozen doses have been taken. Musk, together with large, hot enemata, has led me over many a difficult pass, and I again offer this experience of mine, which now extends over fifty years, as a contribution to your aid in dire distress, always, however, reminding you of the fact that all these measures are not exclusive to influenza, but to all conditions of nerve exhaustion, no matter from what cause.

At last, let me allude to a singular experience which was published ten years ago. I do not know that it has been repeated since.* Goldschmidt[5] reports as follows: "About New Year's, 1890, a lady suffering from influenza landed in Madeira and disseminated the disease in a short time. Two months previously there had been an epidemic of smallpox and numerous vaccinations and revaccinations were performed. Now, it so happened that all those who were successfully vaccinated—112 all told—remained free of influenza. Of 98 who were vaccinated unsuccessfully, only 15 took sick." The author concludes from this experience that successful vaccination is a preventive against influenza. But as yet there is

*In the discussion following the reading of this paper Dr. Holbrook Curtis referred to the internal use of vaccine virus by himself and others. A. J.

not enough known to justify any such conclusion with anything like certainty. Still, it suggests the possibility of a future serotherapy for influenza and its very serious consequences.

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THE CLINICAL PICTURE OF EPIDEMIC INFLUENZA.

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The subject of this paper, although well worn, is not devoid of interest. The clinical picture of epidemic influenza is a composite—several panels set into a single frame. The name of the disease is itself a misnomer, a considerable proportion of cases exhibiting no catarrhal symptoms referable to the upper air-passages. This fact is in consonance with the modern conception that many of the specific infections may affect the organism as a whole, without necessarily giving rise to certain special and localized lesions, the presence of which was formerly considered a prerequisite to the existence of the disease. Thus, the finding of intestinal ulceration is not essential to the post-mortem diagnosis of typhoid fever, for in this disease there may be a generalized typhoid septicemia, or the brunt of the attack may be borne by the lungs (pneumotyphoid) or the kidneys (nephrotyphoid). So, also, scarlet fever may kill without an eruption; or in lobar pneumonia the systemic infection may be so intense and overwhelming that death takes place in the stage of engorgement and beginning consolidation, or, in the same disease, the general septicemia dwarf into insignificance the pulmonary localization, although life has been sufficiently prolonged to allow ample time for the development of the latter.

As with these, so with influenza. The incidence of the toxin of the influenza bacillus (Pfeiffer's) may fall sometimes upon one, sometimes upon another, organ or system; or after expending its force upon one set may subsequently involve others; or may manifest itself as a general acute toxemia. The symptomatology of the disease is therefore extraordinarily diverse, and for this reason the disease has superseded malaria as a diagnostic scapegoat with the careless and easily satisfied examiner.

In general after an incubation of from one to four days the disease sets in abruptly with chilliness or, in some instances, with a severe rigor. In women recurring syncope is not uncommon. Fever is almost always present, but is extremely variable, ranging from 100° to 105° F. and continuing with irregular remissions for from one to ten days. Recurring chills with high intermittent fever, closely simulating malarial fever of the same type, are not very uncommon; but a blood-examination shows the absence of the plasmodium.

There is, in almost all cases, severe headache and general aching, with a degree of weakness and prostration which, except in the presence of severe complications, is out of all proportion to the apparent cause. Delirium is not uncommon, especially in women, children and neurotic men.

The general symptoms just described are manifested in varying degrees in all cases. Depending upon the special localization of the infection certain varieties of the disease are recognized.

The early symptoms of the *respiratory form*, which is, perhaps, the most common, are those of a severe coryza, followed usually by pharyngitis, laryngotracheitis and bronchitis. Very commonly a careful examination will reveal a slight, patchy pneumonia with scanty physical signs. The cough is apt to be violent and paroxysmal. The occasional extraordinary persistence of the influenzal cough is one of the remarkable features of the disease, and it may prove one of the most difficult problems of the therapeutist. Morphine to narcotism, in addition to a long list of antispasmodics, sprays, and inhalations, has failed to arrest it, even temporarily, in fortunately rare cases. In other instances the general aching and extreme weakness may be the only characteristics which prove an apparently ordinary coryza to be a true influenza.

The *nervous form* of influenza is almost as common as the respiratory form. The fever is slight, but there is atrocious headache, severe pain in the back and limbs, and marked prostration. These may be, and often are, the only symptoms, but in a certain proportion of cases coryza and cough supervene in the course of two or three days. This is a sufficiently frequent occurrence to require a word of forewarning to the patient.

When the spite of the poison is vented upon the stomach and intestines—the *gastro-intestinal form*—there are nausea, vomiting, abdominal pain, and a profuse watery or serous diarrhea. With these symptoms there is extreme prostration, amounting at times to actual collapse. Such cases are luckily not common, but the possibility of their occurrence during an epidemic of the disease should be borne in mind. I recall an experience of a few winters past in which seven members of one family fell ill, one following the other at intervals of two days, with the regularity of the scholastic row of bricks, three with the nervous form, three with the respiratory form, and one with the gastro-intestinal form of the disease—facts which permitted an easy diagnosis in the last case.

Still more rare is the *typhoid* or *febrile variety* of this disease. The fever is of the continued type, with delirium, dry, brown tongue, tympanites and other evidences of the typhoid status. The recurring chills and intermittent type of fever which characterize a certain proportion of cases have already been mentioned.

The portrayal of the disease is incomplete without a reference to its complications, sequelæ, and occasional symptoms.

Bronchopneumonia is the most common of the respiratory complications; the lobar form less so. Pleurisy is not uncommon, but seldom terminates in empyema. Abscess and gangrene of the lung are rare sequelæ. Edema of the lungs may occur, almost invariably as a sequence of pneumonia. Enlargement of the bronchial glands, of which the physical diagnosis is very uncertain, is, perhaps, rather frequent. Indeed the persistent cough of influenza has been attributed with some show of probability to irritative pressure upon the laryngeal nerves by the swollen lymph-nodes.

Certain symptoms or sequelæ belonging to the organs of circulation are very common. The pulse often remains unduly frequent or quickens disproportionately after exertion for long periods subsequent to the attack. Two instances of paroxysmal tachycardia have been noted in personal experience as a consequence of influenza. On the other hand bradycardia may follow. An irregular pulse is not uncommon. Several cases of the so-called influenzal angina pectoris have been of much practical and prognostic interest. Women, usually but not necessarily of the neurotic type, appear to be the principal sufferers. The pain may be very severe, precipitated especially by mental emotion, less often by physical exertion, and the severest attacks may occur at night. The heart action is usually weak and often irregular. All the cases seen, in two of which a diagnosis of true stenocardia had been made by good observers, have recovered in periods varying from six to eighteen months. In all of these the patients were under forty years of age, and there were no physical signs of arterial degeneration. A weak, often dilated heart, without anginal symptoms, is by no means infrequent. Inflammation of the pericardium and endocardium may occur; so also may phlebitis and thrombosis of different vessels.

The nervous system is affected to some extent in all cases. Thus depression of spirits is extremely common, sometimes developing into an actual melancholia; and a persistent insomnia may follow an attack. Active delirium has been noted, and one case of acute mania, which recovered under sanitarium treatment, occurred last winter as a sequel of a grippal bronchopneumonia. Neuralgias are common; migraine less so. Inflammatory diseases of the nervous system may be initiated. Occasionally one sees cases presenting the symptom-group of cerebral meningitis, these symptoms persisting for two or three days and then vanishing. In two instances death occurred after violent meningeal symptoms and the autopsies showed intense cerebral hyperemia, evidently the beginning of an acute encephalitis. In such cases recovery may occur with a resulting hemiplegia or monoplegia; the formation of an abscess of the brain is rare. Much more frequently encountered is some form of neuritis.

Neurasthenia, of a light grade, is, perhaps, the proper term to apply to the prolonged weakness of convalescence from this disease, but it is astonishing to realize the frequency with which a severe and protracted neurasthenia can be traced directly to an attack of influenza, an attack which at the time of its occurrence did not seem to be of especial intensity. In these cases one cannot help acknowledging a special predilection of the influenza toxin for the nervous system, even when allowance is made for the natural inclination to attribute a condition to the most obvious, although not necessarily the most efficient, cause.

The spleen may enlarge acutely as in other acute specific infections. Catarrhal jaundice is a sequel of which several instances have been observed, due usually to a gastroduodenitis arising from the action of the poison upon the mucosa of this part of the intestinal tract, although the jaundice may be purely of the toxemic form.

Acute nephritis is not rare; hematuria and acute congestion without a true nephritis may occur. Conjunctivitis, as a part of a coryza, is frequent, iritis uncommon, and optic neuritis rare. A rather common complication is a suppurative inflammation of the middle ear, followed in an unusual proportion of cases, especially during the winter of 1899-1900, by mastoiditis. In one case the symptoms were so violent and threatening that operation was imperative at the end of forty-eight hours from its inception, and the whole mastoid process was found to be infiltrated with pus. The fever, which at the time of operation was 105.6° F., subsided very gradually, not reaching the normal until two weeks after the surgical interference. Vertigo, sometimes very persistent, and occasionally due to labyrinthine disease, is not infrequently observed. Herpes labialis is very common. Sometimes a diffuse erythema, and possibly purpuric spots, are witnessed.

With reference to the diagnosis it is desirable that in doubtful, or suspected sporadic cases a bacteriological examination of the bronchial or nasal secretions should be made in order to find Pfeiffer's bacillus, which, if present, will declare the disease to be influenza. This examination is not easy and is reliable only when made by an expert. During the existence of an epidemic there is usually no difficulty in making a diagnosis, nor in a sporadic case if the symptoms range themselves under the head of one of the recognized types. The cardinal symptom is the excessive and disproportionate weakness. The disease may require differentiation from the following:

1. *Typhoid Fever.*—Influenza begins suddenly and lacks the regular temperature curve, rose spots, and positive Widal reaction of typhoid fever.

2. *Cerebrospinal Meningitis.* — In certain cases of influenza the sudden onset, headache, backache, delirium, and muscular stiffness may afford a clinical picture exactly like that of cerebrospinal meningitis, and the differential diagnosis must depend upon the bacteriological ex-

amination; in the one case for the Pfeiffer bacillus, in the other for the meningococcus.

3. *Bronchopneumonia.*—If the question arises as to whether a given case of bronchopneumonia is of influenzal origin, a rather peculiar and anomalous combination of physical signs may answer the question in the affirmative, *viz.*, varying degrees of dulness over both chests posteriorly, with weak respiratory murmur, impaired transmission of voice sounds, and a shower of fine and subcrepitant râles at the end of a deep inspiration, heard in scattered areas or patches, especially at the bases. The combination is probably indicative of a mixture of bronchopneumonic spots and collapsed lobules.

As to prognosis, recovery occurs in the large majority of cases. The mortality varies from ½ to 2 per cent., and is generally due to a complicating severe pneumonia, especially when affecting the very young or the aged.

INFLUENZA AND THE NERVOUS SYSTEM.

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THE numerous affections of all tissues during or following attacks of epidemic influenza suggest either invasion by a most ubiquitous poison, or lowering of the general resistance to the detriment of vulnerable parts. The specific cause of the disease was established by Pfeiffer[1] in the discovery of the influenza bacillus in 1892, and the relations of this bacillus to the multitude of conditions due to the infection have since been abundantly investigated. The almost universal presence of the organism in the secretions of the air-passages indicates clearly its point of contact and favorable culture-ground, and efforts to locate it in other regions have been only occasionally successful. Canon[2] claims to have isolated Pfeiffer's bacillus from the blood, Heryng[3] reports its discovery in the blood from the spleen; Cornil and Durante[4] report a case of meningitis, in which the influenza bacillus was the only apparent cause of the pus in the pia mater; their observations have been confirmed by Eugene Fränkel,[5] and Pfuhl[6] has found the organism in the pus from brain abscesses, and in the cerebrospinal fluid of the lateral ventricles. Pfeiffer himself reports its presence in the lungs, and in sections of tissues found it in the veins, and was able to cultivate colonies from the spleen and kidneys. Kruse[7] regards this general distribution with some doubt. He finds Pfeiffer's bacillus most particularly in the secretions of the respiratory tract (nose and bronchi), and frequently, perhaps even regularly, in certain parts of the lungs, but hesitates to accept statements showing its prevalence in inner organs, especially those of the central nervous system. He acknowledges that the influenza bacillus may be present in these organs, but believes that when they appear to be the chief seat of the disease, there is probably some other hidden localization of the bacillus, as in the accessory nasal cavities, or middle ear, from which its toxin may take its origin. He concludes that influenza is an infection localized in the air-passages, and that the extraordinary general symptoms are due to the formation by the organism of a very powerful poison. Griffiths and Ladell[8] have extracted from the urine of influenza patients a poisonous ptomain, which caused in animals high fever and death in eight hours, and Hood[9] reports similar results of observations carried out by himself.

These reports are of value as confirming the clinical evidences of the virulence of the influenza toxin. With the exception of the few cases in which the bacillus has been thought to exist in other organs than the respiratory tract, the symptoms have been ascribable to the bacterial products, and these have exerted their malignant influence most directly and severely upon the nervous system. The invariability of the nervous manifestations, even with predominating symptoms in other than nervous organs, has been universally noted. Thus Heidenreich,[10] writing during the pandemic of 1830-'33, declared epidemic influenza to be "an affection of the ganglia, with irritation of the mucous membranes;" Leichtenstern,[11] in his observations upon the pandemic of recent years, reiterates, "There is no doubt that the influenza toxins are severe nerve-poisons, and incite inflammatory and degenerative processes, especially in the peripheral nerves, similar to other bacterial toxins and poisons (alcohol, lead, mercury, etc.);" Berkley[12] states that the "toxin of influenza seems to fall with especial stress upon the central nervous system;" A. Schmitz[13] defined influenza as "in the first line an epidemic nervous disease;" Sell[14] as "infectious neurasthenia;" Wilks[15] regards the "nerve disturbances as the very essence of the complaint," and Althaus[16] goes so far as to claim the "bulb as the portion of the nervous system affected." Draper[17] writes that "the cause of the disease is one which spends its force primarily and directly upon the nervous system," and directs attention to the frequent occurrence of relapse, which "is more severe and accompanied by more serious lesions than the original attack."

In the absence of bacteriological proofs, which are not always obtainable, a certain symptom-complex is accepted as pathognomonic, and the diagnosis may be decided by the epidemic character of the disease, and, in the individual case, by "the sudden invasion with chill and high initial fever, the extremely *prostratio virium*, the intensity of the nervous symptoms, and the sometimes exclusively nervous character of the disease, without respiratory symptoms. (Leichtenstern *l. c.*) It may be added that mild attacks occur without the initial febrile invasion, in which the *prostratio virium* is far more severe than that usually associated with infectious processes. In no other toxic disease, except tetanus, is there such disproportionate involvement of the nervous system. This is shown by lassitude, weakness

and mental depression, and is not infrequently followed by one or more complications, as cough, bronchitis, pneumonia, meningitis, anorexia, diarrhea, nephritis, which have given rise to the misleading classification of the disease into the "respiratory," "nervous," "digestive," "circulatory" and "genito-urinary" forms.

Influenza may consequently be defined to be an acute infectious disease, caused by a specific bacillus, cultivated in the respiratory tract, the toxin of which possesses an especial affinity for the nervous system.

Practically every known form of nervous disease has been attributed to influenza. In many cases a previously existing or quiescent malady has been lighted into activity, and instances of severe degenerative lesions of the nervous system, as paralysis agitans, disseminated sclerosis, system diseases of the spinal cord, general paralysis and exophthalmic goiter, may be explained in this way.

The undoubted and unquestioned nervous conditions due to influenza may be divided into two classes: First, those accompanying the invasion of the disease, and appearing as its initial symptom; and, second, those following as sequelæ or complications.

The nervous symptoms accompanying the attack may be manifested in the peripheral nerves, both cranial and spinal, or the central nervous system. An almost invariable symptom of the invasion is severe neuralgic headache, generally most pronounced over the frontal region, and involving the eyes, causing the tearing or aching pain in the bulbs which is particularly characteristic of the disease. Second in frequency only to the cephalic pain are the neuralgias in the limbs and back and intercostal spaces. Gowers[18] regards the pains in the back and limbs as originating in the fibrous tissues, and compares them with "fibrous rheumatism." The lumbago and sacral inflammation may extend to the sciatic nerve, giving rise to perineuritic sciatica. Neuralgias in the distribution of one or more branches of the trigeminus nerve are common, usually showing points of exquisite tenderness on pressure. Other peripheral pains of most varied character have been noted, varying from transient discomfort to neuritic seizures lasting several weeks, and attacking individual nerves or groups, often of asymmetric and unusual distribution. Thus one patient, while dressing in the morning, having had no prodromata, experienced an excruciating pain in the right shoulder, at the same time became chilly, feverish, dizzy, and was prostrated. The limb was not moved without great suffering and remained helpless for several weeks. During convalescence it was one inch longer that its fellow (the scapular muscles). Joffroy[19] reports a case in which neuralgia in the arm and shoulder was followed by atrophy of the deltoid, supraspinatus, infraspinatus, pectoralis and biceps; Brosset[20] cites a case presenting paralysis of all four extremities, and Leyden[21] reports a case of Landry's paralysis, beginning with the "typical picture of polyneuritis, and becoming dangerous by ascending." In his case the peronæi, right radial and root of the recurrens showed neuritic atrophy, and there were microscopic lesions in the cord.

The post-influenzal symptoms on the part of the peripheral nerves are even more bizarre than those accompanying the febrile attack. These may be the effect of an originally severe lesion, in which more than a functional disturbance must be assumed, as a greater or less degree of neuritis. Leichtenstern (*l. c.*) summarizes the literature to 1896, which includes cases of palatal and pharyngeal palsy, paralyses of the extrinsic and intrinsic ocular muscles, singly and in various combinations, unilateral or symmetrical; hypoglossal and facial paralysis, lingual hemiatrophy, atrophic paralysis of the shoulder, chest and limbs, including affections of the deltoid, supraspinatus, infraspinatus, trapezius, serratus magnus, pectorals, and the musculature of the distribution of the radial, ulnar, median, peronæal and crural nerves. Von Rad[22] also reports a case of pure serratus paralysis following influenza. Oppenheimer[23] reports three case of bradycardia, in which the pulse-rate became forty, forty-eight and forty-five, respectively. He writes that he has "not the least doubt that the *pulsus rarus* is due to the immediate action on the pneumogastric nerve or the ganglia of the heart by the influenza toxins." The writer has also observed a patient showing an abnormally low pulse-rate, varying from sixty to forty-four, and also a case with pronounced cardiac arhythmia. Sansom[24] describes cases of tachycardia, with or without irregular action of the heart, and has observed palpitation, flutterings, flushings, perspirations, faintness and tremors, together with paroxysmal dyspepsia and flatulence, nausea, gastralgia and diarrhea—attacks to which he has applied the suggestive name of "vagus storms."

Such a "storm" was exhibited in the following case, showing a most remarkable grouping, in which temporary Cheyne-Stokes breathing was complicated by involvement in succession of the sensory and mixed cranial nerves of the right side—the first, second, fifth, eighth, ninth and tenth—the motor series remaining intact.

The patient was a gentlewoman, aged about forty years, widowed, a school teacher, who for several years had been under both medical and surgical treatment for irregular lesions, neuralgic and osseus, attributed to specific disease. During the second week in March, 1899, she was prostrated by the characteristic febrile movement and pain of influenza, which was then prevalent. On March 21st she was much improved, free from pain, and appeared to have entered upon convalescence. During the following morning she became greatly exhausted, had dyspnea and complained of pain and numbness over the entire right half of the cranium, stating that the affected area was clearly defined by a line drawn through the middle of the face and head. This condition became more pronounced during the day, in the

evening there was difficulty in swallowing, and she stated that the right side of the head "felt as if it belonged to another person." Examination revealed in the affected region analgesia and partial anesthesia, tenderness at all of the trigeminal points, puffiness of the eyelids and face, distention of the veins and deviation of the lower jaw to the left upon opening of the mouth, with paresis of the right masseter. The temperature was 100° F. On the 23d of March further examination showed the hearing of the right side to be lost, both externally and by bone conduction, and entirely normal on the left. On the 24th of March there was absence of the sense of smell and tactile sense of the right nostril, the test being made with paregoric and camphor; inspiration was deeper and fuller on the right half of the thorax than on the left; the right eyelids were edematous and the supraorbital region was tender. The eyeballs moved freely in all directions. There was some difficulty in reading, but the fingers were counted correctly, and no affection of sight could be determined. At eight o'clock in the evening the patient became extremely restless and complained that she could not lie upon the right side, which had hitherto been the easiest position. The respirations numbered thirty-six, and the expansion of the left side was greater than that of the right. She spoke of a "queer, drawing" sensation of the right side of the neck and a "peculiar sound" about the ear. Hearing on this side was still absent. She also complained of a "tugging" sensation from the epigastrium to the back, and while the examination was in progress, a plainly defined rectus spasm was observed, followed, a few minutes later, by irregular, sharp, clonic contractions of the muscles of the trunk and neck of the right side, and finally of the right upper extremity. The temperature was normal, pulse 100. At this time the respirations became irregular, and closely approximated the Cheyne-Stokes rhythm. Photophobia was marked, there was temporary stupor, and a convulsion seemed imminent, but the crisis was promptly relieved by a subcutaneous injection of morphine. On the following morning the patient was greatly improved, able to take nourishment, stronger and free from pain, and two days later convalescence had begun. Slight numbness and defective hearing continued for several days, but complete recovery followed.

Bristowe[25] and Preston[26] report numerous cases of labial herpes in epidemics at a school for girls and on board a training-ship, respectively; G. Finzi and Camillo Moglia[27] observed herpes zoster, and Luigi Pennetti[28] reports a case of bilateral zoster.

The effects of influenza upon the central nervous system may be immediate or sequential. The immediate effect, manifested as great nervous prostration, has already been mentioned. Gross acute lesions of the brain and cord have been noted. Geill[29] states that "at autopsies of cases dying from the influenza poison the central nervous system is always found much congested." Oppenheim[30] mentions the deceptive attacks of hemiplegia, monoplegia, aphasia, etc., following infectious diseases, and especially influenza, which, after a longer or shorter time, disappear. Meningitis, simple, purulent and hemorrhagic, has been several times recorded, and a severe form of the invasion of the fever, resembling meningitis, and terminating promptly in recovery has been recorded by the French as "pseudo-meningitis grippalis."

The following case may be cited as showing the confusing character of the nervous symptoms of influenza and the great possibilities for error.

The patient, a schoolgirl, fourteen years of age, was received at the St. Lawrence State Hospital on December 28, 1893. The delirium had been prolonged and severe and resulted in the diagnosis of insanity and the subsequent commitment. In the institution the meningeal origin of the symptoms was at once recognized, but the lesion was supposed to be tuberculous, a supposition which appeared justified by the pulmonary signs. The eventual restoration of the patient to complete health necessitated a revision of the diagnosis, which was then decided to be "grip pneumonia and meningitis." When admitted to the Hospital the patient was said to have been insane for two months. She was in a cataleptic state, with irregularly occurring local and general spasms, and complete mental and physical helplessness. At the preliminary examination paraplegia, ophthalmoplegia, retraction of the head and of the abdomen, rigidity, general cutaneous hyperesthesia and *tache cérébrale*, with distinct dermographia, were the predominating symptoms. She remained in a critical condition and during the month following there was a marked febrile movement, but with occasional periods of improvement in which she exercised some control of the voluntary muscles. On January 10, 1894, examination of the chest showed areas of dulness at both apices, posteriorly, with general diminution in resonance, universal bronchovesicular breathing, coarse, dry rhonchi, and occasional sibilants, indiscriminately distributed through the lungs. A few days later acute decubitus developed over the trochanters of both sides, and clearly punched, sloughing ulcers, extending to the bone, resulted. On February 19th the high-pitched percussion note, with dulness, was elicited as before, and the sibilant râles continued, as did the bronchial quality of the respiration. There was some improvement in the general condition at this time, and the ulcers of the thigh began to heal. In March the meningeal and pulmonary symptoms had disappeared, and the patient began to rally from the extreme helplessness. Her mind was clear and she began to use her limbs. In April she was able to move about, gained in weight, convalesced rapidly, and early in June she was discharged from the Hospital, entirely recovered.

Of the acute hemorrhagic meningitis in the etiology of which influenza is especially prominent, Strumpell[31] writes: "These cases are ush-

ered in by most sudden and severe cerebral symptoms, and with high fever pass quickly to a fatal termination. The autopsy reveals, generally in one hemisphere only, numerous hemorrhagic encephalitic foci."

Among the functional disturbances of the nervous system due to influenza, hysteria and neurasthenia have frequently occurred. A liberal interpretation of the neurasthenic symptom-complex permits this condition to represent the postinfluenzal vital depression. Gowers[83] graphically describes this as follows: "It is an intense feeling of inertia. Every action, physical and mental, requires an effort of the will to initiate and maintain it that is almost painful. . . . In perhaps the majority it is only after some months that the natural freedom of untrammeled effort is regained." Neurasthenic states, rapid fatigue on exertion, lassitude, loss of the faculty of mental concentration, follow naturally the initial nervous depression. In many cases, under prompt treatment, these conditions improve in a comparatively short time, but others continue for months ordinarily associated with melancholy or hypochondriasis.

The psychoses of influenza also play an important part in its record of debility. Leichtenstern (*l. c.*) assumes that short and sharp attacks of mental derangement may be regarded as a prolonged and atypical manifestation of the initial delirium, generally occurring in patients of good heredity, while the prolonged attacks of insanity probably indicate a predisposition.

Analysis of the causes of insanity alleged upon admissions to institutions for the insane shows that the number of cases attributed to influenza reached its maximum several years after the pandemic of 1889-90. Thus, no patients whose insanity originated in influenza were admitted to the Pennsylvania Hospital for the Insane until the year ending March, 1892, when nine were received. To the New York State Hospitals for the Insane, six postgrippal commitments were made in 1890, in a total of 1942 admissions, and in 1892, sixty-four were received in a total of 2637 admissions, or two and a half per cent., the number remaining fairly constant for the succeeding years. Unfortunately for comparison, statistics are not given as to the grafting of insanity upon other infectious diseases, but its occurrence following typhoid fever and pneumonia is known to be infrequent.

It is shown by these figures that some other factors than the poison of the disease must be operative, and these are to be found in the mental and physical prostration following the disease, which offer a suitable basis for the development of insanity in susceptible subjects. Chapin[84] believes that "it is not established or probable that insanity can arise directly from zymotic influences, but it does happen that whatever causes operate to depress vital force or lower the standard of bodily health, diminish the power of resistance, and the weaker organs are the first to show failure." He also directs attention to the disastrous moral effect upon the community of "a sudden and wide-spread epidemic, which leaves an impress directly and remotely upon the general health." Régis[85] emphasizes the hereditary predisposition. Clouston[86] writes that "the poison of influenza destroyed the cortical energy to a much larger extent than any of the continued fevers or zymotics, and its effects on the mental condition of Europe during the years of its prevalence far exceeded in destructive powers all those diseases put together. It left the mental and nervous tone of Europe lower by some degrees than it found it." Wernicke[86] places influenza as the type of acute diseases in which the nutrition and general strength are rapidly reduced. Jutrosinski[87] notes the immoderate use of depressing drugs, as antipyrin and antifebrin, as a contributory cause of the influenzal insanity.

All forms of insanity have been attributed to influenza, but statements as to the organic-degenerative types, especially those of insidious beginning, as general paralysis and the senile insanities, must be accepted with caution, as an already existing or threatening condition may have been accentuated. The deleterious and often fatal effect of the disease in old age has been noted, both within and without hospitals for the insane. The general experience has been summed up by Draper (*l. c.*), who writes: "Its most serious results have been observed in persons of advanced years and in those enfeebled by previous disease or intemperate habits."

The prevailing form of postinfluenzal insanity has been melancholia, not infrequently with a pronounced hypochondriacal element. This has been accentuated by active disturbances of the senses, with delusions, giving rise to a state of hallucinatory confusion, and in more severe cases by acute delirium. Maniacal states have been common, but much less frequent than melancholy. With the exception of a peculiar group of cases simulating general paralysis, cited by Hack Tuke,[88] there has been little pathognomonic to differentiate the postgrippal psychoses from similar states due to other causes. The prognosis in postinfluenzal mental maladies is generally hopeful. As a complication in existing insanity influenza has had many results. In general its effects may be regarded as commensurate with the resisting power of the patient. As an agent promoting recovery from insanity, a not uncommon result of intercurrent febrile affections in institutions for the insane, influenza has not been effective. Metz[89] alone reports an instance in which insanity was favorably influenced. His patient, who had been the victim of persecutory ideas for two years, was prostrated by influenza on January 13th; on the 17th, wrote a coherent letter, and on February 9th, following, was discharged from the institution, recovered.

From what has been written the following conclusions may be derived:

1. The infection of influenza produces a toxin, which has a severe and selective action upon the nervous system.

2. The immediate effects of this toxin are shown in affections of the peripheral nerves and the cerebrospinal centers.

3. The remote effects are manifested in lowered tone of the nervous system, predisposing to other diseases.

4. These ensuing diseases arise in weakened or predisposed organs, giving rise to the different classes of "respiratory," "alimentary," "genito-urinary," and "circulatory" forms of influenza.

5. Postinfluenzal insanities are also a complication of the postinfluenzal states of nervous debility, in patients mentally predisposed.

6. The postinfluenzal insanities are not essentially different from other insanities due to vital depression.

7. The prognosis of influenzal affections is generally good, under proper management.

8. Exception to this is in influenzal affections arising during the course of other severe diseases, as pneumonia and general paralysis, and during senility complicated by mental or physical deterioration.

Addendum.

Table showing the total number of admissions and the admissions attributed to influenza in the Pennsylvania Hospital for the Insane (private), and in the New York State Hospitals (public), from 1890.

	1890	1891	1892	1893	1894	1895
Total admis'ns.	192	172	175	183	163	164
Pennsylvania Hospital:						
Postinfluenzal admissions ..	0	9	3	3	5	1
	1896	1897	1898	1899		
Total admis'ns.	152	169	169	181		
Postinfluenzal admissions ..	3	0	2	2		
	1890	1891	1892	1893	1894	1895
Total admis'ns.	1942	1401	2637	2704	4001	3029
New York Hospitals:						
Postinfluenzal admissions ..	6	11	64	51	51	72
	1896	1897	1898	1899		
Total admis'ns.	5615	4649	5542	5243		
Postinfluenzal admissions ..	62	49	41	64		

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THE BACTERIOLOGY OF THE INFLUENZA BACILLUS.

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Notwithstanding the many bacterial investigations carried out (1889-92) for the purpose of determining the microbic factor concerned in the production of influenza, it was not until 1892, after the great epidemic, that studies revealed any micro-organism which could seriously be regarded of etiological significance. In the early part of that year Pfeiffer[1] found a very small hitherto undescribed bacillus which at least in some measure conformed to the requirements of specificity. Almost simultaneously appeared the papers of Canon and Kitasato describing the same micro-organism. Later studies have abundantly confirmed the observations of this first investigator. Whilst the evidence at hand does not fully fulfil the postulates of Koch, the fact that it is found almost only in cases of influenza, and that its presence corresponds to the course of the disease, certainly warrants the belief of such a relationship.

When examined either from exudates or cultures the bacillus of influenza appears as an extremely small, slender, non-motile bacillus, whose length scarcely exceeds its breadth by two or three times. The bacilli may be stained by almost any of the basic aniline dyes which they take up rather feebly and irregularly; the poles are usually more deeply colored than the middle parts, thus often giving the appearance of diplococci. In the writer's experience carbol-fuchsin or Löffler's methylene blue has given best results.

The organisms are readily decolorized by Gram's stain, although Kamen states that when influenza bacilli are grown in an atmosphere of hydrogen they often are quite resistant to decolorization by this method.

Although the morphological features of the organism appear quite constant, it is of interest to note the observations of atypical forms by Grassberger.[2] In cultures showing involution forms he was able to study long filamentous types with or without branching and sometimes with bulbous extremities. Lartigau has also seen forms somewhat like this in cultures subjected to somewhat higher temperatures than 37° C.

The facility with which the bacillus influenzæ is destroyed is a matter of much practical importance. Outside the body it has been found very susceptible to injurious influences, such as drying and suspension in unfavorable media. Drying seems to exercise a particularly destructive action; thus Pfeiffer found that bacilli dried for twenty hours were killed; or sputum which had been dried for two days gave no cultures. In ordinary water the life history is also very short. Suspension in such a fluid usually caused their death within two days, whereas in bouillon they may retain their vitality up to two weeks.

From observations of this kind it has been generally assumed that the extracorporeal existence of the influenza bacillus must be very short, and that infection probably takes place by means of the freshly contaminated secretions. As to this being the only method, we are less certain. In this connection the observations of Kaufman[3] are of the greatest interest. As a result of numerous examinations of the dust of telephone-receivers he was able to find bacilli of influenza many times. This is the only observation of this kind that we know of in which these germs have been found outside of the body or its fresh secretions.

Heat and chemical influences react very readily upon this bacillus. Exposure to a temperature of 60° C. certainly destroys it in five minutes; higher temperatures act much more rapidly. Immersion for ten minutes in 1-1000 bichloride of mercury solution, or for thirty minutes in 1-100 carbolic acid, kills it.

The cultural side of the subject for a certain time presented difficulties. Pure cultures may, however, be obtained on the surface of solid media previously smeared with a small amount of blood, either of human or animal derivation. Agar-agar (with or without the addition of glucose or glycerin) and blood-serum give the best results. Experience has shown that the value of adding blood resides in the blood coloring-matter, for the addition of hemoglobin alone acts equally well. Nasstinkoff, on the other hand, substitutes the yolk of egg for the blood and claims satisfactory results. Kruse recommends the use of agar plates covered with rabbit's or pigeon's blood, upon which the infected material is spread with a platinum brush.

The best cultivations occur at body temperature; although it is stated that no growth can be obtained below 28° C., the author has found this possible by gradually cultivating the influenza bacillus at diminishing temperatures. According to Pfeiffer, growth does not take place in the absence of oxygen, and only very slightly in the depths of stabs. Kamen, however, has grown the organism in hydrogen. When thus cultivated he found that they live for three weeks, whereas they usually die within ten or fourteen days when grown exposed to the air. Whilst able to obtain some growth under anaerobic conditions the author has not noted the differences in viability studied by Kamen.

Meunier,[4] as did Grassberger before him, pointed out that the presence of the staphylococcus pyogenes aureus exercises a most favorable influence on the development of the bacillus influenzæ in cultures, not only as regards abundancy, but also seems to stimulate growth activity. Several trials under these conditions have convinced the author of the accuracy of the observations. This, of course, has been noted for other bacteria also.

At the body temperature colonies develop at the end of twenty-four or forty-eight hours and appear as extremely small hyaline droplets, clear as water, often only detectable with a lens. The older colonies sometimes have a yellowish or brownish center, supposedly due to absorption of the coloring-matter of the medium. Kitasato makes it a special point to insist that the colonies are never confluent; as a rule, this is certainly so, but occasionally one notes confluence of two or more colonies. In broth the growth is less abundant; at the end of forty-eight hours white particles are seen on the surface which after a time sink forming the so-called "woolly" precipitate.

Up to the present times studies of the experimental infections with the influenza bacillus have really not been very numerous. It has been clearly shown that under natural conditions influenza probably does not occur in the lower animals. But our knowledge of the experimental side is sufficient to show that a series of phenomena may be induced in animals by the introduction of living and dead bacilli in some respects like those observed in human beings; the analogy is, however, by no means so close as certain experimenters would have us believe. Pfeiffer by injecting living cultures into the lungs of monkeys was able to induce a condition of fever of remittent type. Somewhat similar results were obtained by smearing the uninjured mucous membrane of the nose with a pure culture. In another case in which large quantities of the germs were thrown into the upper respiratory passages, marked prostration and high fever occurred; finally, the animal died at the end of twenty-four hours. There was little evidence of multiplication of the bacilli; the effects were evidently largely due to toxins contained in the bodies of the bacteria. In the case of rabbits, intravenous inoculations of living cultures produce dyspnea, muscular weakness, and fever, but the bacilli very rapidly disappear from the body. Similar effects have been incited by the injection of dead bacilli.

The results of these experiments led Pfeiffer to conclude that influenza was largely a toxic process arising from the absorption of poisonous substances within the bacterial protoplasm. This view has been further extended by the studies of Cantani, and Delius and Krolle.

Attempts to produce immunity in animals have been followed by almost uniformly negative results. Studying the action of the influenza toxin by intracranial injections Cantani added nothing to our knowledge in so far as immunization is concerned. The more recent investigations of Delius and Krolle[5] were somewhat more encouraging, but on the whole negative. Increasing doses of culture within the peritoneum enabled greater resistance, but large doses were invariably fatal. And this is more or less in harmony with clinical observation which shows that instead of immunity after an attack, the individual is really as susceptible as before if not more so.

The distribution of the influenza bacillus within the body is of great interest. In ordinary cases it has been found in the bronchial exudate and nasal secretions in considerable numbers. In typical acute cases it is often present in almost pure culture in the purulent greenish-yellow bronchial exudate. Kamen succeeded in finding it in every one of the hundred cases he examined. At first the bacilli are free, often in clumps, but as the disease advances one sees them more often within the protoplasm of leucocytes. Toward the end the large proportion of them have this distribution. It is stated that as the number of bacilli decreases the staining becomes less sharp and involution forms are apt to appear.

In the epidemic of 1898 Wassermann[6] says that in influenza cases with pneumonia the influenza bacilli were scanty and disappeared very soon; and Clemens[7] has again spoken of the relative rarity of cases in which influenza bacilli may now be demonstrated.

It is a matter of some importance that it be clearly understood that the influenza bacillus may persist in the sputum for weeks after abatement of the symptoms. Elmassian[8] goes so far as to say that it may exist in the respiratory tract as a saprophyte. Other organisms, especially pneumococci and streptococci are often associated with the influenza bacilli, either in acute cases or in chronic lesions of the lungs. Pfeiffer has shown that the influenza bacillus may be found many months in association with chronic diseases of the lungs, at times producing exacerbations. Finkler has observed this tendency among consumptives. Williams[9] in the examination of washed sputa in cases of pulmonary tuberculosis has also found abundant influenza bacilli when no influenza was known to be present in New York. Under appropriate conditions, we have then almost at all times the excitant with which to start an epidemic.

The inflammation of the lung sometimes extends to the pleura; when this has happened the influenza bacillus has occasionally been found in the pleural exudate. But the action of this organism is by no means limited to the respiratory system. Indeed, it has been found in the pericardium (Hogersted), endocardium by Flexner and Austin and in the central nervous system by Pfuhl and Walter, and Cornil and Durante. Pfuhl believes that meningeal infections occur through the roof of the nasal cavity. Haedke has described an interesting case of meningitis and epidural abscess secondary to otitis media in which influenza bacilli were found in the pus from the ear and mininges. The bacillus has also been found in uncomplicated middle-ear disease by Bulling, Pfeiffer, and the writer.

Notwithstanding the statement of Canon that the bacilli may frequently be found in the circulating blood, the opinion of most observers leans the other way. Klein succeeded in finding them in only six out of 43 cases; and Pfuhl obtained it once out of six cases. Slawyk has reported a most interesting case of general infection with multiple localizations in the joints (hands, foot, knee) and meninges.

Turning to the side of diagnosis, one readily from the first appreciates certain difficulties in the application of the bacterial method along practical lines. Within certain limits an early diagnosis may often be made by a mere microscopical examination without resorting to cultures. If a specimen of sputum should contain an almost pure culture of very minute bacilli which take the stain faintly compared with the other bacteria present and which are decolorized by Gram's method, it may be assumed that the case is one of influenza. When other bacteria are present the diagnosis becomes more difficult; cultures will usually then be required. In order to insure success the sputum should be collected with care. The mouth is first washed with sterile water, the sputum placed in sterile dishes, and the culture prepared on media covered with blood. The morning sputum is most satisfactory. Wynekoop, of Chicago, who has given the bacteriological side of the subject much attention, uses a swab to procure some of the infected mucus or exudate from the pharynx, tonsils and bronchi of the patients. The swab is then rubbed on solidified serum containing hemoglobin. The staining procedure is much the same as that employed for microscopic diagnosis of diphtheria. Smears are made on coverglasses by means of the swab. The smear is then stained by carbol-fuchsin (Ziehl's solution). Culture specimens of the organisms are also stained by the same reagent.

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THE TREATMENT OF INFLUENZA IN ADULTS.

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SINCE it is universally admitted that epidemic influenza is an infectious disease the theoretical treatment should consist in remedies which would neutralize or antidote the infection; but inasmuch as the infectious process is primarily of short duration and one attack does not render the patient immune against another, it is not likely that any preventive vaccine will succeed in either protecting the patient against an attack or in mitigating the severity of the disease in a patient already affected. So long as we do not know of any specific agent which will abort an attack, or mitigate the severity of the infection, it is proper that we should consider the subject under different phases and for each type endeavor to formulate a treatment.

Generally speaking, epidemic influenza will manifest itself in one of three forms, *viz.*, (1) that in which the brunt of the attack is upon the respiratory system, (2) that in which it is upon the gastro-intestinal system, or (3) that in which it is upon the neuromuscular system. Respiratory affections are evidently the most frequent and at the same time of more lasting moment, therefore it is of these that we will first consider the treatment.

At the outset in discussing the treatment of the respiratory form of epidemic influenza, certain clinical facts in relation to the history of the disease must always be borne in mind. First, and of diagnostic importance, is the fact that the prostration and the fever and the systemic disturbance are out of all proportion to the extent or severity of the disease as determined by physical signs. Next, granted a moderate involvement of respiratory area or even a disease stationary so far as extent of tissue is involved, this is no guarantee as to the prognosis in an individual case. The logical deduction from this observation is that we are dealing with an infectious process in which prostration is marked, in which supporting treatment is from start to finish urgently needed, and, while it may be very tempting to yield to the delusions of our ancestors and catch hold of that bugbear of the last generation and attack the fever as a morbid entity and subdue it, as we can, by a dozen different methods, it is undeniedly true that, while the results may be a better-appearing temperature chart, we have certainly done our patient injury. The more we know about fever as a symptom, the less we are disturbed either by its height or by its duration. If temperature must, in the opinion of the physician, be lowered, it is more effectually done by the ice-water coil over the heart than by any other method. So, also, pain may appeal to the routine practitioner as something that is to be attacked with vigor and the hypodermatic syringe and the morphine tablet be urgently indicated, perhaps even demanded by the patient; but the interference with nutrition and the damming up of the excreta would certainly leave the patient in a worse condition than would the pain.

However, specifically, what shall we do for a patient suffering from uncomplicated epidemic influenza attacking the respiratory system? First, free and comfortable expectoration should be obtained by methods which do not disturb the heart. First and foremost ammonium carbonate in five-to-ten-grain doses, repeated as frequently as the situation may require, each dose to be given in two ounces of milk, will relieve unnecessary coughing, will remove a great deal of the chest oppression, will fortify the heart, and, so far as I know, has only one disadvantage, *viz.*, the liability to produce a disturbance in the stomach after five or six days. The irritation of throat and nose is best relieved by sprays of ten drops of eucalyptol or five or ten grains of menthol to the ounce of albolene or other suitable liquid hydrocarbon. It is needless to say that the patient should be housed, kept in a room of equable temperature, not too hot, and that his diet should be a fluid one and as nutritious as possible. If the ammonia is not well borne, strychnine, either as good-sized doses of tincture of nux vomica or strychnine itself as a sulphate or nitrate, should be administered. Here we get not only the action of strychnine on the heart muscle and respiratory center, but as well its action on the cord and the resulting improvement in nutrition. As for the use of alcohol, the previous habits of the patient and the urgency of the symptoms call for consideration. Generally the patient is better without it. The methods for relief of pain will be considered later.

When from physical signs we find that we are dealing with pneumonia, then the teaching which we have already followed so carefully during the past few years must guide us. The bleeding of the lesser into the greater circulation by the nitrites, preferably nitroglycerin, and increasing and frequently-repeated doses of strychnine, must be carried out until the patient is convalescent. But inasmuch as the danger is not so much from the mechanical side as from the infection, every opening for elimination must be seized upon and every indication for supporting treatment followed. The skin, the kidneys and the bowels must not be neglected. For a slowly-resolving pneumonia and for a tardy convalescence from bronchitis, no drug yields better results than creosote carbonate, thirty or forty drops given in sherry several times a day.

It will be readily noticed that this scheme does not include any of the depressant expectorants, any of the depressant coal-tar products, or any of the physical means, such as poultices and cold- and hot-water applications or baths and various other indirect methods of obtaining what we perhaps get more readily by what has been outlined. The keynote to the situation is supporting the patient and eliminating the morbid products.

In the gastro-intestinal form of epidemic in-

fluenza the pain, nausea and vomiting all call for relief. At the outset I presume nothing is better than a thorough evacuation of the bowels by calomel given in small doses frequently repeated. Next comes intestinal antisepsis which can be accomplished by the organic bismuth salts, naphtalate, iodophthalinate, or, possibly, the subgallate. High intestinal irrigations aid much in the elimination of the toxins, not only by the bowels but also by the kidneys. Frequently rectal alimentation is urgently demanded and must be carried out. Sometimes small amounts of zoolak, small amounts of a good beef-extract (by that I mean those containing the albumins) will be retained when taken by mouth.

In the neuro-muscular type of influenza, the bone-breaking pains call for treatment, and for all that quinine, here as in other forms, has been lauded, personally I have found that the results obtained hardly warrant our pushing it to the extent which the severe infection would seem to justify. Euquinine seems somewhat more efficient, although statements made that it does not cause tinnitus are incorrect, for if administered in sufficient amount the tinnitus is quite as severe as that caused by quinine sulphate, for instance. Although there is great temptation to relieve the headaches and the muscular pains by the coal-tar products of the anilin series, those which are sufficiently analgesic are also to a greater or less extent cardiac depressants and their unrestricted use is by no means advisible. In fact, it may even be dangerous. For instance, Hale White reports that seventeen deaths from the use of antipyrin occurred during one epidemic of influenza in the city of Vienna alone. However, it is possible to relieve a large part of the suffering in this form of influenza by a combination of coal-tar products and salicylic acid or some of its forms without incurring dangerous depression in the circulatory and respiratory apparatus. This may be accomplished, for instance, by alternating phenacetin or acetanilid, of which the depressing action upon the heart is neutralized by caffeine, with acetanilid and methyl salicylate, or salipyrin, a combination of salicylic acid and antipyrin, may be administered to the extent of relief of pain; but, in spite of the laudation with which this drug has been favored, I have seen depression produced by its use, and here caffeine should always be employed to counteract its influence. If the practitioner will guard his analgesic of the anilin series with caffeine and limit the dose to that required for the relief of pain and to a less amount than that which disturbs the heart, we may feel much more confidence in advising its use. Kryofin seems more decidedly analgesic and less depressant than most of this series.

There is a rather neglected remedy which very frequently, though not invariably, affords great relief from the headaches and backaches so common in influenza. I refer to gelsemium, which should be pushed until slight ptosis appears, when the limit of its physiological activity has been reached. The success, when obtained, is so brilliant that it is really worth the trial, although, so far as I know, no exact indications can be furnished for its use, nor can *a priori* success or failure be predicted. Sometimes the muscular pains, if limited to the back, can be markedly relieved by external applications. For this purpose the best is a mixture of equal parts of kaolin and glycerin to which ten per cent. of boric acid has been added and a sufficient quantity of any volatile oil to make an agreeable odor, applied as a cataplasm in sufficient thickness and kept hot. This is cleanly, retains its heat and is renewed without difficulty.

I have already said that elimination of the toxins should be safeguarded. Fortunately constipation is not a common symptom in influenza. For the diarrhea which occurs in most victims no treatment is indicated. From the beginning a neutralization of the infectious material in the intestines should be brought about as already shown. The diarrhea should be looked upon as beneficial. Warm baths relieve muscular pains and, when accompanied by friction, keep the skin in good condition and add much to the comfort of the patient. Not only the presence of albumin and casts in the urine should be determined, but the specific gravity, the urea excretion, and, above all, the amount of urine passed should be carefully noted. For urinary insufficiency no better remedy can be found than continuous enteroclysis with decinormal saline solution at a temperature of 110° F., which not only aids renal elimination but is a cardiac stimulant of no mean importance.

This brief outline gives only the salient points which should be considered in the treatment of adults suffering from epidemic influenza. The important matters to be avoided seem to be (1) opium and (2) all measures which depress the circulation. Furthermore we should feel that, although we are dealing with an infection which is severe for a time, it is soon past and should, when carefully treated, leave no traces when it occurs in a healthy individual. It is epidemic influenza in old alcoholics, in diabetics, in persons suffering from arterial, cardiac or renal degeneration, and in old age, that our anxieties are awakened; but with avoidance of all depressing measures and a consideration not of symptoms but of the general aspect of the patient, *the treatment of the disease and of the patient*, success follows in a very large percentage of our cases.

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A NOTE CONCERNING THE TREATMENT OF INFLUENZA BY THE EMPLOYMENT OF HYDROPATHY.

By E. L. SHURLY, M.D.,
of Detroit, Michigan.

A disease so common during the autumn, winter and spring seasons as influenza, and one presenting such different degrees of severity and complications cannot fail to enlist at all times the lively interest of the medical practitioner. Its symptomatology is usually typical in the first

stage or onset, although its course is irregular. Consequently its therapy calls for the exercise of good judgment in the selection of remedial agents. As before mentioned the first stage or onset is generally quite typical exhibiting a vasomotor disturbance represented by cephalalgia, coryza, faucitis and bronchitis. But soon after this other mucous membranes, one or more of the viscera, or the nervous system, may so participate as to change materially the phase of the case.

Whether the infection be at first local, and then general, is a question which need not detain us now. Suffice it to say that a disturbance of the upper respiratory mucous membrane of a neurotic and inflammatory nature is usually presented, and, from a therapeutic standpoint, whether it is due to the direct irritation of the morbific agent or whether this phenomenon is a salutory reaction on the part of Nature designed for the elimination or limitation of the infection is a question that ought not to deter us from prompt action, because it is obvious that an apparatus like the respiratory apparatus is in danger of serious injury, whether it be the seat of primary infection or whether it be the part selected for the elimination of the poison or its products in this disease. Moreover, we must recollect that the intensity of the first stage may determine serious inflammation and suppuration of the accessory cavities of the nose and of the ears as well as of the pulmonary apparatus itself, while the second stage may be characterized by serious neuropathies or visceral disease which may either prove speedily fatal or leave some distressing or incurable chronic ailment. Therefore even mild cases of influenza should not be left wholly to Nature for relief.

The first therapeutic indication should be to assist Nature in the elimination of the infection and in the modification of the action on the ganglionic nervous system. The accompaniment of this desideratum without endangering the life of the patient is not always easy—especially when the attack is tolerably severe; nevertheless a judicious conservatism should always be maintained. The well-known physiological sympathy between the mucous membranes and skin may in this instance be profitably brought into action by persistently stimulating the function of the latter apparatus. On account of the tendency to asthenia this cannot always be safely done by the employment of the so-called cardiac depressants or such diaphoretics as pilocarpin, antimony, etc., but it may be safely accomplished in nearly all cases by the persistent use of the hot-water bath, steam bath, or hot pack, in conjunction with quinine and mild anodynes. These should be used during the first stage quite freely, the patient may, however, receive a moderate dose of hydrargyri chloridum mite with sodium bicarbonate in the beginning, to be followed by a saline draught. He should be confined in a warm room as long as necessary and treated with hot-water baths, steam baths, or hot packs about once in two, three or four hours until free diaphoresis is established. This condition may be maintained by frequently administering hot bland or acid drinks.

When not contraindicated by some unusual condition of either the cardiac apparatus or central nervous system, the patient may be treated preferably by a series of steam baths which may be easily given by wrapping him in a blanket around and up to the neck and seating him upon a cane-seated or other chair with perforated bottom under which a vessel containing at least a gallon of very hot water is placed, then so arranging the blankets that the steam emanating from the vessel may rise and fill the space between his body and the blankets. This position may be maintained by the patient for a period varying from three to six minutes or until perspiration starts or the patient complains of faintness, when he is to be placed in bed (previously warmed) and wrapped in the same blankets that enclosed him while on the chair. This having been done moderately warm drinks may be administered, if desirable, to quench thirst and still further favor diaphoresis. If a hot-air bath is preferred, an alcohol lamp instead of the vessel of hot water is to be placed under the chair. When for any reason it is deemed inadvisable for the patient to sit up in the foregoing manner, the hot pack may be substituted. This manipulation is accomplished by placing under the bed-covering a number of hot bottles (rubber or glass bottles filled with very hot water) or hot flatirons, or bricks. These may be frequently changed until free perspiration is brought about. The practice of turning steam from a tea-kettle or other vessel directly under the bedclothes should be avoided because of the danger of irritating the skin of the patient by the too direct contact of steam. Another objection to this method, that of wetting of the bedclothes, is not an important one, inasmuch as a little dry rubbing with a towel or the subsequent placing of a few hot water bottles in the bed will readily prevent the chilling of the patient. Hot-water packs applied to various parts of the body are very useful substitutes for the more thorough application of the steam or hot bath.

The employment of the cold pack should take precedence over hot baths, etc., whenever the temperature is very high, for in such cases the leading therapeutic indication is to reduce the temperature from a dangerous to a safe degree, and then follow with hypodermic injections of normal saline solution, one ounce every hour until diuresis or diaphoresis has become established. By these measures the skin may be made to greatly assist in eliminating the poison, and also serve an important part toward preventing dangerous visceral congestions. Of course, if the physician is called in at a late stage of the disease, these measures will be inadvisable. Supposing, however, that the case has been seen early and these proceedings have been adopted with good effect, then quinine in three-grain doses should be given every two hours alone or

with opium or paregoric until the physiological effects are manifested. Especially to allay pain and distress should tinctura opii camphorata or opium be administered in good doses until the cough or other irritation abates, and expectoration has become established. This drug will be found safe and far preferable to any other as an anodyne.

Such a plan of treatment will not only modify the first stage of the disease, but will often cut short its course and prevent the subsequent events constituting the second stage, such as ethmoiditis, visceral inflammations, bronchitis, catarrhal pneumonia, etc. For the relief of debility and nervous perturbation, following the first stage, the administration of phosphorus (gr. 1/100) in capsule, in oil, will be signally effective toward giving tone to the system and assisting in the recovery of the normal metabolism. Strychnine, also, is highly useful in this connection as a general nerve tonic. Complications and sequelæ which may arise must be treated, of course, according to the circumstances of the case.

Although there are cases of asthenic character which admit of the use of the coal-tar products, their employment generally will be found inadmissible in the treatment of influenza.

32 Adams Avenue, West.

CLINICAL MEMORANDUM.

INFANTILE GRIP WITH UNUSUAL TEMPERATURE RANGE.

By L. E. LA FÉTRA, M.D.,
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During infancy temperatures above 105° F. are not at all unusual; but rectal temperatures below 97° F. are rarely noted in the course of febrile disease. Slight ailments may readily produce high temperatures in the young, but subnormal temperatures seem to indicate a profound disturbance of the child's metabolism, and are produced by severe infections, such as grip, malaria and pyemia. The case reported presents an unusual combination of very high and very low temperatures, along with some other noteworthy features.

The patient, a fine girl baby thirteen and a half months old and weighing twenty-three and a half pounds, had been perfectly well until February 27, 1899. That morning she had a sudden rise of temperature to 103° F., without vomiting or convulsions; when seen in the afternoon there was rapid, labored breathing and a temperature of 103.8° F. It was evident that she had a pneumonia, although the signs were not clear; but the next day there was plainly a consolidation of the right upper lobe. No other lobe became involved, and the disease pursued a typical course for pure lobar pneumonia in infancy, the defervescence occurring by lysis, as shown in Chart I., and the lung clearing up completely in less than two weeks. The only treatment was the application every three hours for twenty minutes of cold compresses wrung out of salt water at 70° F. The baby stood the attack well, losing only half a pound during the two weeks. On March 11th she was playful, had a good appetite, wanted to get out of bed, and seemed thoroughly convalescent.

But early on the morning of March 13th, without any apparent cause, the baby seemed profoundly prostrated, with her skin cold and "all goose-flesh," and the temperature was found to be only 97° F. Later that day it was 99.4° F., and then it began the startling and erratic course shown in Chart II. On March 14th 103.8° F. was the highest record, and it seemed probable that the lung was being attacked a second time by the pneumococcus. The next afternoon, however, the record stood at 97.6° F., but by midnight it was at 106° F., and the same high range was reached again on March 16th at 6 P. M. In the twenty-one hours following there was a fall of *nine degrees* to 97° F. In the next thirty-six hours there was an excursion up to 105.2° F. and down again to 94.6°, the last being a drop of *ten and a half degrees in twenty-one hours.* For the next three days the fever remained fairly high, but at 1 A. M. on March 22d the lowest observation was made, a temperature of 94.4° F.

The treatment had been merely symptomatic and supporting, so that the falls in the temperature were not to be ascribed to antipyretic drugs. Along with the peculiar temperature, there were great prostration, almost complete anorexia, and a mumbling delirium when the temperature was high. The emaciation was rapid, due jointly to the high temperature and the refusal of food, the loss in weight averaging over three-quarters of a pound per day. There was no pain nor tenderness, no cough nor any catarrhal discharge from the eyes, nose or bowels.

The case was a puzzling one, for in the wake of pneumonia such violent excursions of temperature suggested empyema or some other pus process, such as pyelitis or pyemia. The physical signs in the abdomen, chest and throat were negative, and there was no tenderness around the ears. The urine showed no pus-cells nor any reaction for peptones. Other possibilities then left were malaria and grip. Careful and repeated examinations of the blood for malarial organisms proved negative, and, as already stated, there was no enlargement of the spleen. The diagnosis of grip, therefore, was made by exclusion. It is regretted that no search was made for the Pfeiffer bacillus, even though this germ is not always found in all cases of a grip epidemic. The correctness of the diagnosis was confirmed, however, by the subsequent history.

On March 22d Dr. Holt saw the case with me in consultation, and advised immediate removal to some country place where there were no cases of grip. Lakewood was at that time such a place, and accordingly the baby was taken there on March 24th. A rapid change in the type of

the fever was evident. At no time after the change of air did the temperature rise above 99.2° F. nor fall below 96.4° F. After the sixth day in the country the temperature was practically normal. From the time of arrival improvement in the general condition began, and the child increased rapidly in weight so that at the end of four weeks she had almost entirely regained the nine pounds lost during her eleven days' illness.

While the family was in the country the house was fumigated with sulphur and thoroughly aired, so that in the fall when the family returned it was thought safe for the baby to be put in the same nursery. In less than two weeks she had a second attack of the grip, but this time the course of the disease was milder, the temperature ranging only from 98° to 105° F. Permanent removal from the house was followed by rapid return to health, and there has been no third attack. As a result of this experience with sulphur fumigation, I now insist that formaldehyde be used thoroughly to disinfect every room in which a case of grip has occurred, and thus far I have had no reinfections.

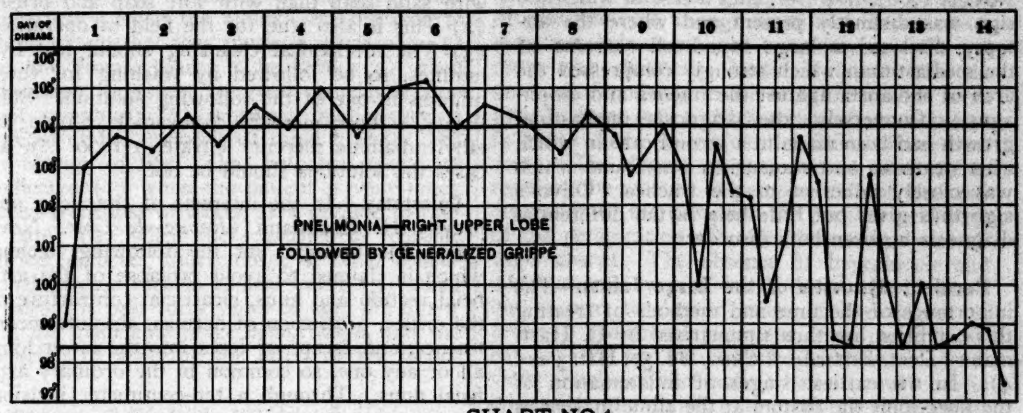

CHART NO.1

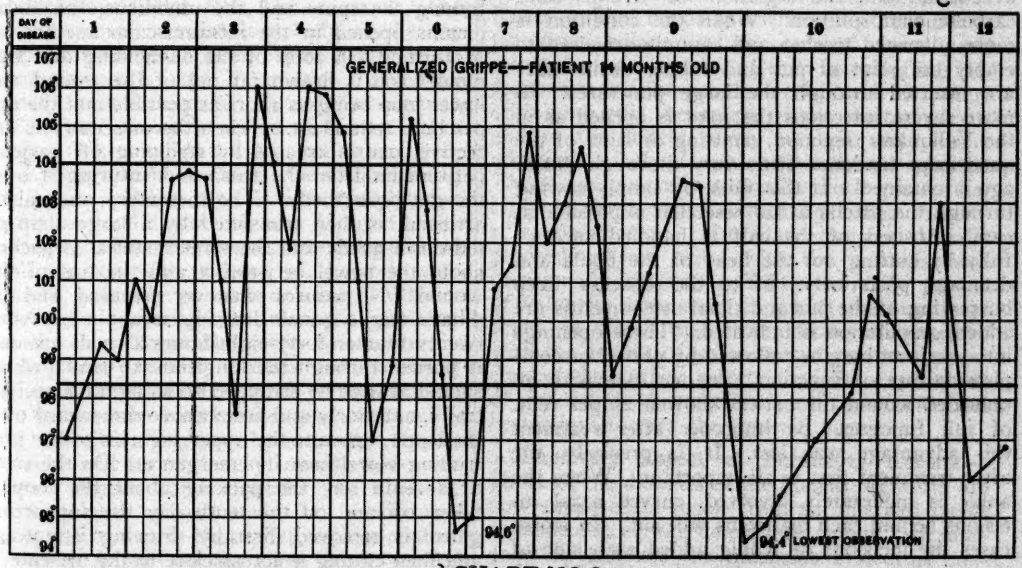

CHART NO.2

The particular features of interest in the case are as follows:

1. The very low temperature, 94.4° F., showing profound infection.

2. The wide excursions of temperature, a fall of ten and a half degrees being noted in one instance.

3. The efficacy of change of air as the sole curative treatment.

4. Retention of the grip germ in the house for several months, in spite of sulphur fumigation.

MEDICAL PROGRESS.

Value of Oliver's Symptom.—Downward or lateral pulsation of the larynx has been frequently described as a symptom pathognomonic of aortic aneurisms. F. Jessen (*Münch. med. Woch.*, Nov. 6, 1900), however, cites a case in which the sign was distinctly present and where the autopsy disclosed a large round-cell sarcoma of the mediastinum which strongly compressed the arch of the aorta against the trachea and esophagus. Conversely, the diagnosis mediastinal growth had been made in a second case in which after death an aortic aneurism was found which was closely adherent to the trachea. Oliver's sign thus gives but little help in the differential diagnosis between both disorders.

Purulent Synovitis of the Large Joints.—The importance of the time and methods of treating this condition are thus summarized by O. Hartmann (*Deut. Zeitschr. f. Chir.*, Bd. 57, Hft. 3 and 4). In the earliest stages of inflammation of the knee-joint the custom at the clinic in Jena is simple aspiration, the most thorough possible evacuation and the injection of five-per-cent. carbolic acid solution. When the condition is more advanced trochar and cannula are used to empty the joint of pus and rubber drain tubes are inserted through the large punctures. In more severe infections the joint is opened as in the Volkmann resection, omitting division of the quadriceps tendon. Thus very thorough drainage is obtained. If this fails, by simply sawing through the patella a full resection is possible at ease. Abscess of the calf is handled successfully by cutting out the head of the fibula and drainage posteriorly. If to the abscess deep burrowing of the pus and tibial osteomyelitis are added, amputation is indicated. These openings into the joint may be followed by partial or complete failure of function. In one case with an unhealed wound the patient showed 25 per cent. of full function. By improper after-treatment this advantage was lost. It is precisely the after treatment that is all important. When the ankle is moderately involved, curved axial incisions behind each malleolus will aid. In worse cases the incisions of König added each side of the extensores permit through and through drainage. When such interference has failed and pus is spreading, before thinking of a low leg amputation, a resection through these incisions may be done or after the manner of Langenbeck and Hüter. In the adult the hip always needs resection. In children, when the pus has not burrowed through the adductores, the head of the femur is carefully cleaned and the acetabulum and capsule drained posteriorly. The wrist offers best prognosis under resection. Pus in the elbow and shoulder have occurred at this clinic so rarely that the author can offer no well-proved procedure for treatment, since several have been tried and none yet selected for its great success.

Hand Disinfection.—F. Schenk and G. Zanfal (*Münch. med. Woch.*, Nov. 6, 1900) come to the following conclusions with regard to the best methods for disinfecting the hands: (1) The mechanical cleansing is done more efficiently with sand soap than with soft soap and brush. (2) This is also true for the field of operation. (3) The mechanical cleansing should last five minutes, to be followed by washing for three minutes in one of the following solutions: Sublimate, 1-1000; mercury oxycyanide, 2-1000; or ethylendiamine mercury citrate, 1-1000. In all cases the solutions should be hot.

Colostomy.—In the interests of simplicity and brevity H. Hartmann (*Revue de Chir.*, Nov., 1900) has brought out the following technic which is claimed to avoid prolapse of the artificial rectum and anus, cicatricial contracture of the orifice, protrusion of hernias, absolute incontinence, and escape of feces into the lower loop, all or any one, so common in the ordinary artificial anus. Through a ten-centimeter incision, two centimeters within the anterior superior iliac spine, centered upon and perpendicular to a line joining the spine and the umbilicus, the abdomen is opened in the intramuscular method of McBurney. A loop of the descending and sigmoid colon is drawn far out of the wound, the lower loop being as short as possible and the upper limb redundant. When the mesentery is defective, one is created by stripping off parietal peritoneum from the fossa and suturing it over the gut posteriorily. The mesentery, normal or artificial, is then transfixed by a large strip of iodoform gauze and the same material is packed about the bowel between it and the lips of the wound. No sutures whatever are used, and ordinary sterile gauze dressing is applied. After twenty-four or forty-eight hours a small opening is burned through the longitudinal band (which should always be arranged so as to traverse centrally, anteriorly and from above downward over the loop), opposite the upper segment of the protruding bowel near its emergence. On the sixth or seventh day the packing about the loop is taken off and on the tenth day the supporting gauze is removed, first by drawing it upward and then cutting it across close to the mesentery, thus the large, matted extremities, often soiled with feces, are not pulled through the depths of the wound. The function of this anus is almost always excellent and recovery from the operation simple.

Fibroids in Non-Pregnant Uterus.—After discussing the different methods of treatment of this condition, E. F. Fish (*Am. Jour. Obstetrics*, Nov., 1900) says that, from personal observation, *myomectomy* is the operation of choice (1) when the tumor is pedunculated; (2) when it is single, whether subserous, interstitial, or submucous, and can be enucleated without loss of

uterine tissue, and the tumor cavity can be closed and covered with peritoneum; (3) when the desire for an heir outweighs all other considerations. That *hysterectomy* is indicated (1) when the tumor involves so much of the uterus that a cavity too large to be properly closed and covered with peritoneum would follow its removal; (2) when several tumors exist, especially little nodules; (3) when the adnexa are diseased to such an extent that they must be sacrificed; (4) when the disease ceases to be local; (5) when hemorrhage, pressure, or great pain is a persistent symptom; (6) whenever malignancy is suspected or the tumor is of rapid growth; (7) after change of life. That *palliative treatment* is indicated (1) when the patient is very much reduced from loss of blood, as a prelude to radical cure; (2) when the existence of chronic nephritis, diabetes, tuberculosis, or other constitutional disease forbids radical cure; (3) when the patient is past forty years of age, the tumor small, the main annoyance hemorrhage, and she is desirous of awaiting the effect of the menopause.

Treatment of Typhoid.—The treatment of typhoid fever at New York Hospital is detailed by F. C. Keays (*Med. Rec.*, Dec. 1, 1900). The routine treatment consists regularly of the use of the tub-bath given every three hours when the temperature is 103° F. or over. The bath is usually started about 80° F. and run down to 70° F. or 65° F. for a period of ten to fifteen minutes. When tub-baths are not taken well, alcohol sponge-baths are used, the alcohol being cooled by ice. When there is a contraindication to baths, acetanilid, grs. iij, may be used every three hours. For sleeplessness combinations of trional, grs. xv, with codeine, gr. j, work well. The baths generally prevent delirium. Whisky is efficacious, especially in alcoholic patients. Hypnotics are frequently given by rectum in very delirious patients. Nausea and vomiting are relieved by milk modified with cerium oxalate, grs. v, and sodium bicarbonate, grs. x, to milk, ℥ viij. Distention is treated by turpentine stupes, rectal tube and turpentine by mouth, ♏ v-x, or enemata. Whisky and digitalis are used as heart stimulants as indicated. If hemorrhage appears, the patient is kept quiet, cold is applied to abdomen, saline enemata given to replace the blood lost or saline infusions are used. Milk forms the diet during the course of the disease, but kumyss, broths and beef-juice are frequently given. As soon as the temperature reaches normal the diet is rapidly increased. As little medication as possible is given during the course and convalescence.

Gonorrheal Rheumatism.—In an interesting account, based upon an analysis of 250 cases of gonorrheal rheumatism, G. Lorimer (*Quarterly Med. Jour.*, Nov., 1900) finds that the ages ranged from 17 to 58 and that by far the largest number of patients were males. This he explains is more due to difficulties present in recognizing the disease or the chronic discharge in females. The time from the onset of the gonorrhea to the occurrence of the arthritis averages three months in women and six weeks in men. A hereditary tendency to rheumatism was observed in so few cases as to be merely coincidental. Pyrexia was generally present, usually of subacute type, though acute and chronic cases were not infrequent. In two instances, the pyrexia was distinctly hectic in type. The absence of a tendency in the arthritis to shift from joint to joint was a characteristic feature except in those cases in which the initial fever was acute. The degree of pyrexia was observed to regulate the amount of perspiration and the concentration of the urine and the peculiar acid odor of the perspiration of acute rheumatism was always absent. The absence of hyperinosis and oligocythemia was a fairly destructive feature, but seemed to depend more on the degree of fever. Cardiac complications were rarely present. There was no evidence to show that previous attacks of rheumatism had any influence in increasing the liability to gonorrheal arthritis except in the acute type. The order of frequency of involvement of joints was as follows: Knees, ankles, hands and wrists, hips, shoulders, temporomaxillary joints, cervical joints and sternoclavicular joints. Other complicating affections were non-purulent conjunctivitis, sclerotitis and iritis, neuralgia of the lumbar plexus and of the sciatic nerve, myalgia and painful affections of the fasciæ, especially the plantar. There was generally noticed a much greater liability to chronic articular changes than in ordinary rheumatism. Muscular atrophy, usually proceeding *pari passu* with the arthritis, was occasionally observed. Salicylates only proved of value in those cases in which the onset was acute, in which case their efficacy disappeared with the advent of subacute symptoms. In conclusion the author asserts that the explanation of gonorrheal rheumatism is still *sub judice*, but he inclines toward the toxemic theory.

Hereditary Aspect of Pernicious Anemia.—Many of the diseases of the human organism are now supposed to result from an inherited feeble resistance to certain deleterious agents. In muscular dystrophies the muscular system is congenitally short-lived. In hereditary chorea and certain forms of dementia the central nervous system begins to degenerate while the remainder of the body may be in excellent condition and the patient be in the prime of life. C. L. Dana (*Med. Rec.*, Dec. 1, 1900) reports a case of pernicious anemia in which the family history is very suggestive of a possible teratological defect or weakness in the blood-making organs. The patient, aged forty-seven years, was the thirteenth of fourteen children, all of whom were born dead except one brother next in age to himself, who died from pneumonia. Both father and mother were healthy, but the patient was born when the

mother was about forty years old. No history of syphilis could be obtained, and this trouble rarely causes more than three or four miscarriages. The history of the family shows an extraordinary lack of vitality on the part of the generation to which the patient belonged, and, as frequently happens in a long series of still-born children, those who finally survive have teratological defects, it is believed that this congenital weakness was expressed in the patient reported by the early degeneration of his blood-producing tissues.

Yohimbin, a New Aphrodisiac.—Yohimbin, the alkaloid of the bark of a tree endemic in West Africa, has been found by L. Löwy (*Therap. Monatshft.*, Nov., 1900) to produce marked congestion of the sexual organs and possibly also new formation of spermatozoa, without, however, irritating the kidneys as is the case with cantharides. In the impotence of tabes and other organic diseases no influence on sexual function could be detected; on the other hand, irritable weakness or paralytic impotence was favorably affected. The proper dose is 5-10 minims of a one-per-cent. solution of the hydrochlorate three times daily.

Retroperitoneal Fibromata of the Uterus.—After considerable experience the following results of surgical attack upon these tumors are presented by D. de Ott (*La Gynécol.*, Oct. 15, 1900). He handled his cases either by the abdominal or the vaginal route. In the former cases after free exposure of the deep field, the peritoneum was divided longitudinally and stripped in two broad flaps off the tumor. The mass was then enucleated or excised clean and the cavity packed carefully with gauze, the end of which emerged through the vaginal vault. The abdominal wound was closed by tier sutures and the vagina was lightly packed with gauze. Of 189 examples of this procedure 20 were fatal (10.6 per cent.). In his later series the vaginal route in front or back of the cervix uteri was always used. Generally the enucleation could be done *en masse* and extraperitoneally; occasionally it had to be done *en morcellement* and the serosa divided. The rest of the technic was the same as the previous manner. By the vagina he has also removed submucous fibroids by dividing the posterior wall of the body into its cavity enucleating and then suturing. Of 193 cases only 6 died (3.1 per cent.). His conclusion is that the vaginal approach should always be considered before resorting to laparotomy.

Gastroptosis.—The condition of gastroptosis depends so much for its symptoms upon the accompanying lesions of the stomach, such as atony, gastritis, and disorders of sensation and secretion, that no clear picture of the condition has yet been painted. G. R. Lockwood (*Med. Rec.*, Dec. 1, 1900) reviews forty-five cases that he has had under observation in private practice and urges that it is not the position or size of the stomach which causes the disturbance, but the ability of the organ to digest and pass the food on into the intestine. In ten cases without atony there were practically no symptoms, but in those cases in which atony became more marked the symptoms were so constant and severe that the patients were incapacitated for work. He believes that the displacement of the stomach is a predisposing cause of a variety of gastric neuroses which are usually induced by definite mental or physical strain and points out that all his cases of marked atony were decidedly neurasthenic. The gastric acidity is increased in direct proportion to the atony unless counteracted by gastritis which, by reducing the acidity, often lessens the severity of the symptoms. In a large number of cases inattention to the conditions of atony, of neurosis and of gastric secretions has led to an unsuitable, insufficient diet which reacts upon the general condition and the disturbances within the stomach. The amount of gastric distress does not depend upon the quantity or quality of the food and if the irritation be allayed the more they eat the better. A combination of bromide, grs. vj-viij, chloral, grs. iij, resorcin, grs. iij, and chloroform-water, dram j, with gtts. vj of spirits of anise, ounces iv, to disguise the taste, has seemed the most serviceable. The Neptune girdle is a most efficient means of soothing gastric irritability. Two layers of flannel, large enough to cover the entire abdomen, are wrung out of hot water as dry as possible and covered with oiled silk. They are changed twice a day and worn constantly. Mental and physical rest is frequently needed. To reduce the hyperacidity frequent feedings of mixed foods and alkalies after meals are used, such as magnesia, magnesium carbonate, or bismuth.

Actinomycosis Hominis.—The following clinical data are given by J. C. Oliver (*Annals of Surgery*, Oct., 1900) of a case of actinomycosis of the head and neck. Jeweler, forty-nine years old; carcinoma in immediate family; no syphilis; six years ago while suffering from purulent discharge about the teeth a papillomatous, ulcerating, non-indurated patch developed just inside the vermilion border of the left angle of the mouth, with a few metastases, all healing after scraping and leaving a white scar. All the lower teeth were extracted for the pyorrhea except the last molars, which served as anchors for the false teeth-plate. In June, 1899, an ulcer developed opposite one of the clamps in the cheek, spreading after the exciting cause was removed, curetted July 2d following with some improvement. The scrapings were negative as to carcinoma and tuberculosis and hence syphilis was diagnosed in consultation. Iodism was at once induced and maintained, without local relief. Pain now appeared and the ulcer extended to the lips. Late in September enlargements beneath the maxilla appeared. October 7th deep but futile scraping of the ulcer. Epithelioma was now

diagnosed, in the presence of hard masses in the neck, about the body and angle of the lower jaw. Radical operation was now declined. A little later the masses softened and then fluctuated, were incised and evacuated of suspicious actinomycotic pus, but microscopically negative. January 4, 1900, radical ablation was done, but the growth appeared in the incisions, sinuses resulted and discharge of the thin green-yellow curdy pus. Edema of the adnexa began and the nose and throat, with dysphagia, were involved. Finally in the discharge of one abscess the streptothrix and ray fungi after prolonged search were found. Potassium iodide was now pushed, but without promising results. Death occurred March 3, 1900, after a copious hemorrhage, which was stopped by packing, but overtaxed the patient's strength.

Pulmonary Emphysema and Nasal Occlusion.—Dr. Cousteau (*Journal of Laryngology*, Nov., 1900) gives results of experiments on rabbits. One nostril was obliterated and rabbits killed seven months after. Lungs were emphysematous, here and there transparent vesicles, size of a pin's head, appearing in white raised plaques. Under microscope alveolar walls were seen thinned and even burst in places. Similar result was obtained in twelve days by obliterating both nostrils in a rabbit. The importance of maintaining permeability of the nose depends on the rapidity with which even incomplete stenosis of the nose could give rise to pulmonary emphysema.

Tonsils and Adenoids.—From 1892 to 1900 Cuvellier (*Jour. of Laryngology*, Nov., 1900) treated 2785 children at the Hôpital des Enfants Malades. Of these 569 were simple tonsillar hypertrophy, 1060 simple adenoids, and 1156 tonsillar hypertrophy with adenoids. Medium age five to seven years. Adenoids greatly preponderating. Tonsils removed by tonsillotomy when pedunculate, piece by piece when flat or lacunar, did not recur. Adenoids were found in (1) respiratory, (2) auricular and (3) mixed types—2019 cases giving 1214 of respiratory, 75 auricular and 730 mixed. Operation was obligatory for removal. Complications were rare. There were no contraindications except hemophilia. Radically removed, no recurrence.

Bacteriological Diagnosis of Diphtheria.—"Not every membranous sore throat, or laryngitis, is due to infection by the Klebs-Löffler bacillus" and "many mild and non-membranous sore throats do depend upon infection by this organism. It is the presence or absence of the specific bacillus which is now held to decide whether or not a given case is to be regarded as one of diphtheria." So says Dr. Andrews, Pathologist of St. Bartholomew's Hospital (*Jour. Laryngolog.*, Nov., 1900). The diphtheria bacillus has tendency toward "clubbed" form, stains irregularly, owing to metachromatic granules in their protoplasm, has no spore-formation, has no flagella, is non-motile, stains by Gram's method, and does not liquefy gelatin. The size and form of the bacillus admits of variation and the non-pathogenic bacilli may resemble exactly the pathogenic and are not to be distinguished thus, for example, the xerosis bacillus. The acid-producing character of the pathogenic form is confirmatory, but not reliable. The death of an inoculated guinea-pig with the characteristic symptoms is a valuable diagnostic aid, but not absolute. Absolute criteria of pathogenicity may be unattainable. Given requisite time for experiment the pathologist can recognize pathogenic diphtheria bacilli, "but ultimate diagnosis must always rest with the physician who knows all about the case." "Virulent bacilli may be present in the throats of healthy persons who have been in contact with unhealthy persons." . . . "Bacilli like diphtheria may be present in the healthy nose." The bacteriologist should always be given clinical details with material furnished him. "It has happened to me to fail in demonstrating the bacilli during the life in a case of undoubted clinical diphtheria." Negative results are much less conclusive than positive ones.

Retroflexion of the Uterus.—E. Schroeder (*Zeitschrift f. Geburtshülfe und Gynäkol.*, B. 43, H. 3) in view of the frequency of this condition without symptoms publishes the following instructive statistics: First, 90 nulliparæ with 23 retroversions and 7 retroflexions. Of these, the first group, 74, had no pains in the lower segment of the body, although 19 had retroversion and 5 retroflexion; 25 were virgins of whom 8 had version and 2 flexion; the other 49 were married or had had intercourse, 11 showing the backward version and 3 flexion. The second group with symptoms, chiefly pain in the lower part of the trunk, comprised 16 patients with 4 suffering from version and 2 from flexion; among them 3 were virgins with 1 retroflexion uteri and 13 were not virgins, 4 presenting version and 1 flexion. Second, he investigated parous women previous to menopause with these statistics, in all 276 cases, 40 versions and 31 flexions. The group without symptoms was again the larger, 191 with 25 versions and 17 flexions. The series having trouble comprised 89 women, 15 with version, 14 with flexion. His last class included all women past menopause, 45 total, 13 versions, 4 flexions, namely, 38 with no pain, among these 9 versions and 4 flexions, and 7 with pain in 4 individuals with retroversio uteri.

Phlegmasia Alba Dolens.—After a thorough trial of wet dressings of lead and opium and aluminum acetate upon a well-marked case of this condition, A. Herzfield (*N. Y. Med. Jour.*, Dec. 1, 1900) employed Unguentum Credé, fifteen grams, rubbed into the affected extremity daily for two weeks, and found that it had a most beneficial effect which was noticed almost immediately after this method of treatment was begun.

THERAPEUTIC HINTS.

Purulent Pericarditis.—This is a not uncommon accompaniment of prolonged productive pneumonias, according to Bard and Machard, and should be continually watched for. The diagnosis being proven by exploratory puncture, a transverse incision, 8 to 10 cm. (3 to 4 in.) long, is made over the fifth left costal cartilage, beginning a finger's breadth from the sternum. The cartilage is removed, the internal mammary cut between two ligatures, and the pericardium opened and evacuated. After thorough lavage a drain is left in the lower angle and the wound sutured.—*Revue médicale de la Suisse Romande.*

Asthma.—Of palliative remedies, writes W. H. Thomson, the first place belongs to the group containing belladonna, hyoscyamus, stramonium, and duboisin. Hot coffee, very strong, taken on an empty stomach and sipped, acts as a stimulant nervine. Taken after eating it aggravates the asthma by interfering with digestion. Next in value are alcohol, the ethers, chloral, and opium. The fumes of potassium nitrate are very effective. But these remedies do not cure, and it must be remembered that asthma is at no time absent from the asthmatic. In hay asthma the inhalation of carbolized steam or turpentine vapor, twice a day for months, may produce a permanent change in the sensitive mucous membrane. A dose of potassium bromide, grams 2.0 (gr. xxx), with Hoffmann's anodyne, grams 4.0 (℥ j), at bedtime, will often ward off an attack. Many cases of bronchitic asthma are relieved by wearing light under-flannel, which prevents the condensation of perspiration and susceptibility to draughts. Peptic asthma is especially influenced by the state of the alimentary canal. The best meal should be taken early in the day and only the lightest supper allowed at night. Bismuth with powdered calumba or sodium benzoate will often prevent an attack. Of remedies with lasting and curative power arsenic and potassium iodide are by far the best, and they should be combined with nervines and correctives. Of the latter, quinine and cod-liver oil are best with arsenic, and phosphorus and tincture of iron with iodide. A good prescription is:

℞ Potass. iodid..... 6.0 (℥ iss)
Liq. pot. arsen..... 4.0 (℥ j)
Spt. aether. comp.....75.0 (℥ iiss)
Tinct. bellad..... 8.0 (℥ ij)
Syr. aurant. cort.....ad 180.0 (℥ vj)
M. et sig.: Two teaspoonfuls in water an hour after meals.—*Reference Handbook of the Medical Sciences.*

Secondary Anemia.—According to R. C. Cabot, many cases recover with no treatment but the removal of the cause to which the anemia is secondary; as a rule, however, recovery is considerably hastened by therapeutic measures. There is no especial appropriate diet, but what is needed is a full and varied nutrition, which includes plenty of red meat. The digestion may need attention, and not infrequently there is gastric hypersecretion. Diarrhea or constipation are treated symptomatically. Climatic change is of service, especially high altitudes, where the rapid increase in blood-corpuscles appears to be not entirely transitory. Blaud's pill is the best form of iron, two 0.3 gram (5 gr.) pills, three times a day, increased in a week or so to three pills. In the rare cases in which Blaud's are not well borne or do not increase the hemoglobin rapidly enough, one of the organic preparations, such as ferratin, should be tried. The tincture of the chloride of iron should rarely, if ever, be given, on account of its strong tendency to produce constipation, its deleterious effects upon the teeth, and its disagreeable taste. All preparations of iron should be given after meals. Occasionally arsenic is useful, especially in the severer grades of anemia. It is best given as Fowler's solution, two drops after meals; well diluted, increased one drop daily until the physiological limit is reached, as shown by the occurrence of itching or burning of the eyelids, nausea, or vomiting.—*The Reference Handbook of the Medical Sciences.*

Dewees' Emmenagogue Mixture.—This preparation H. C. Wood relies upon almost exclusively in the treatment of simple atonic amenorrhea. The amount of iron should be regulated according to the anemia; of the aloes, according to the bowels; of the cantharides, according to the susceptibility of the urinary organs. The formula is:

℞ Tinct. ferri chloridi..... 12.0 (℥ iij)
Tinct. cantharidis..... 4.0 (℥ j)
Tinct. aloes..... 15.0 (℥ ss)
Tinct. guaiaci ammon.... 45.0 (℥ iss)
Syrupi q. s.....ad. 180.0 (℥ vj)
M. et sig.: Tablespoonful three times a day.—*Therapeutics, Its Principles and Practice.*

Treatment of Chorea by Arsenic and Bromides.—There is a tendency to-day to treat ordinary chorea by very large doses of arsenic. Bechterew does not believe in this practice. He thinks that excellent results can be obtained by giving the bromides at the same time with reasonable doses of arsenic. He prescribes Fowler's solution in ordinary doses, according to the age and tolerance of the little patient, and at the same time gives the following mixture:

℞ Adonis vernalis.... 2.50 (♏xxxviij)
Aqua .....180.0 (℥viiiss)
Ft. Infusion.
Then add:
Bromide of potassium.
Bromide of sodium.aa 4.5 (grs. lxviij)
Antipyrin ..... 2.0 (grs. xxx)
Simple syrup .....16.0 (℥iv)
M. Sig. A teaspoonful 3 or 4 times a day to a child of ten years. *La Presse médicale,* Sept. 22, 1900.

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SATURDAY, DECEMBER 15, 1900.

CUI BONO?

ONE of the most pitiful phases that the practitioner meets in his daily work is the yearning of the sick man to seek after strange gods. The honest physician feels keenly the imputation of self-interest and of incredulity by his patients when he tells them frankly that he believes there is no virtue in a treatment that they are anxious to try; and he never feels more helpless than when he sets before an eager, frightened man some of the broad truths of science on which his treatment is founded, and is met by a recital of the guaranteed cures that have been quoted to him by the advocates of some "system." There is always a physician of a regular school of medicine to back the cure, years of success in foreign lands, untiring fortitude toward the intolerance of narrow-minded doctors, and a list of prominent men whose maladies have been cured after well-known physicians had given them up. To doubt at least a possible efficacy in the face of such overwhelming evidence is but to display that illiberal, jealous spirit of skepticism that the overbelieving too readily apply to the medical profession.

A case in hand will serve to illustrate our point. There has been much said recently about the electrical treatment for tuberculosis. Probably there is hardly a physician in New York who has not at some time cut down his income by sending a tuberculous patient away from his own care to a more favorable locality, and advising him to spend his substance on rest, climate and food, only to find in a short time that same patient back in the city at his old vocation, and putting all his faith and money into some well-advertised cure for consumption. Among all of these the treatment of tuberculosis by electricity has sounded the most plausible to the popular ear. That the germicidal effect of drugs could be made to permeate the lung tissue by cataphoresis was suggested to physicians also, as a new development along well-recognized lines, and the usual appeal for a fair trial on a scientific basis was not denied.

It is characteristic of scientific men, although they are not often credited with such liberality, that they are always willing to test any new idea that may have a shadow of reason in it. Even though they know that certain laws of Nature preclude certain results, yet living in the decade of Argon and the X-rays, they recognize honest, faithful experimentation as the only key to mystery.

With singularly generous motives St. Luke's Hospital of New York consented to experiment upon a method of treatment by electricity of which the claims were: "One hundred per cent. of cures in the incipient stages, 75 per cent. in a secondary stage and 50 per cent. of the cases that would under regular treatment be considered hopeless."

The treatment was given regularly and systematically. Not only were the bacteriological examinations and blood-counts made at the Hospital, but the sputum was sent to the New York City Board of Health, where experiments were made upon guinea-pigs with the supposedly attenuated virus to see whether there was any actual lessening of virulence of the tubercle bacillus.

These experiments were carried on carefully, exactly and hopefully for three months with *absolutely negative results*. None of the changes that were claimed would take place eventuated, from the bacteriological standpoint. The effect of placing the patient in front of the static machine was as ineffectual as placing him before a mirror. None of the patients of the experiment improved any more than did others of like degree of infection on the same good food, regular hours and rest. The unbiased, scientific opinion of all the physicians who assisted at the work at

St. Luke's was, "Nothing in it," as is evidenced by the following circular which is being sent out in answer to all inquiries on the subject: "Replying to your letter, I would say that Mons. Crotte's method of treating tuberculosis by electricity was on trial in this hospital for three months, under the supervision of the Medical Board. Several months ago the Medical Board declared the results to be negative, and asked permission from the Executive Committee to cease their investigations, and to have the apparatus removed from the Hospital. This has since been done."

And yet, as the story goes, the experiments at St. Luke's are being quoted by the advocates of the electrical treatment as conclusive evidence that the method is vouched for and practised by the most reputable hospital in the country. References to them have been made in medical meetings and medical literature, always with the assumption that the test experiments were successful. That such assumptions have been denied and the promulgators of them snubbed makes no difference to those who are sounding the clarion for the cure of tuberculosis by electricity. Their point has been gained.

The public does not hear the authoritative denial of competent physicians, and, if it does, it is easy to say, "Doctors disagree." Thus the suffering patient is imbued with new hope, which leads him to abandon the only possible chance he may have for his life for a course of well advertised treatment, and the physician who has carefully and conscientiously advised him, without considering his own pocket, has to see that hope die when it is too late to follow his advice. What wonder that he signs the death certificate with *Cui bono?* on his lips!

THE THERAPEUTIC VALUE OF PROTARGOL IN DISEASES OF THE EYE.

Since the discovery of protargol in 1897 by the chemist Eichengrün and its introduction as a therapeutic agent by Benario, much literature has accumulated concerning its value in the treatment of certain ocular diseases; and a recent review by Von Sicherer (*Zeitschrift für Augenheilkunde*, September, 1900) is of much interest in showing the remarkable difference of opinion that is entertained regarding it by many experienced and trustworthy observers.

The advantages claimed for protargol are its great germicidal action, its penetrating power, the limited degree of discomfort produced by the applications and the absence of any slough.

The affections of the eye in which the drug seems to have been most generally employed are acute and chronic conjunctivitis of the catarrhal type, purulent conjunctivitis, both gonorrheal and non-gonorrheal, acute and chronic trachoma, blepharitis, suppurative lesions of the cornea and suppurative diseases of the lachrymal duct.

The results obtained from its use have been widely different. Some authors reported cure of the diseases under treatment within a few days' time; others that the results were totally indifferent, and still others that the cases under observation became so much worse that the treatment was necessarily abandoned. Observers also differ much in regard to the strength of the drug to be employed, it having been used from ¼ per cent. (Pflüger) to the pure powder (Darier), though from 20- to 50-per-cent. solutions seem to be those in greatest favor. Those authors reporting the best results claim that a 20-per-cent. solution is about as weak as can be expected to give rise to any benefit and that in very severe cases it must be employed in solutions much stronger. In fact, it is urged by the advocates of protargol that one of the causes of failure among those who report unfavorably concerning its value is the weak solutions that were employed.

Regarding the inefficiency of the drug Lesshafft has directed attention to the fact that in preparing the solutions there frequently occurs, by an excessive heating, a splitting of the silver molecule, making the preparation less active. He states, therefore, that it is best to triturate the powder in a porcelain mortar with as many drops of glycerin as there are decigrams of protargol and then to add cold water drop by drop.

The manner of employing protargol varies somewhat with different observers. Thus, Darier, who was among the earliest to make use of it and who reports most favorably concerning its action, gives the patient a 5-per-cent. solution, to instil into the eye three or four times daily in simple conjunctivitis and as frequently as every half-hour in purulent conjunctivitis, he himself making an application of a 50-per-cent. solution to the everted conjunctiva once or twice daily. In blepharitis and suppurative diseases of the cornea topical applications of the stronger solutions are employed, and it is claimed that though an excessive amount accidentally come in contact with the cornea no injury will result as might be the case from solutions of silver nitrate. Bribosa employs it in the form of 5-per-cent. vapor and most highly

recommends this mode of application, believing it to be far superior to instillations and compresses.

In diseases of the lachrymal duct irrigating with 5- to 50-per-cent. solutions is claimed by some surgeons to bring about a healthy condition of the membrane and a rapid diminution of the amount of the discharge, provided there be present no pathologic condition of the bone (Darier, Messner, Wicherkiewics, Hotz); on the other hand, it is stated (Bistis, Bossalino) that, beyond a slight diminution of the discharge, there is but little improvement. Antonelli advocates the employment of 50-per-cent. protargol sounds, and his claims of excellent results from this method are supported by Bistis.

As a prophylactic measure in ophthalmia neonatorum, most of those who have employed it in the stronger solutions speak well of their results. Cramer reports its favorable employment in 200 cases and Engelmann, who made a comparative study with solutions of silver nitrate, using 20-per-cent. protargol, states that the latter proved superior to the former in every way. On the other hand, Von Ammon and Esmann do not speak so enthusiastically of its value, although it should be added that the latter employed it only in 1- and 2-per-cent solutions.

Concerning the pain and discomfort produced by the instillation or application of protargol there is almost as much difference of opinion as is held regarding its value in the treatment of ocular affections. A review of the literature shows that most observers believe it to be much less painful than solutions of silver nitrate, in fact, producing only a slight, transient burning, but others state that it is fully as painful, if not more so, and that in certain cases the pain from an application is so severe and prolonged as to give rise to the belief that an idiosyncrasy to the drug must exist.

Regarding the countries in which protargol finds its warmest advocates we have France first with Italy a close second. In the United States opinion is greatly divided, as was manifest in a discussion on the subject before the Section on Ophthalmology of the American Medical Association at the last annual meeting. Such men as Hotz, Sutphen, Jackson, Southard, and Connor reported the most favorable results from its employment; on the other hand, De Schweinitz, Wood, Clark, Allport and others were practically agreed upon the remarkable uncertainty of the drug, at times obtaining the most astonishing results from its use and again, under apparently similar circumstances, failing to produce the least improvement of the condition under treatment.

It can be seen, therefore, that the various observations, though covering a large amount of material and originating largely with men of considerable experience, are so widely contradictory in their results that the true value and therapeutic power of protargol in the treatment of ocular diseases cannot be definitely ascertained until much more extended experience is at hand. Of the practical value of the drug there is little question, but problems of idiosyncrasy, dosage, etc., must be solved to give protargol a definite place in ophthalmological practice.

ARSENICAL CONTAMINATION IN BEER.

IN the MEDICAL NEWS for December 1st mention was made of a grave epidemic of peripheral neuritis occurring in the district of Manchester, England, due to arsenic-contaminated beer. The early press dispatches contained but few details, but the *British Medical Journal* and *Lancet* for December 1st, just received, give lengthy analyses of the conditions present from which we gather the following short account of one of the most interesting instances of universal poisoning of food and drink on record.

For the past three or four months clinicians in and about Liverpool have noticed an unusual prevalence of multiple neuritis occurring among beer drinkers. This was ascribed to the effects of alcohol until Dr. E. S. Reynolds, assistant physician to the Manchester Royal Infirmary, and visiting physician to the Manchester Union Hospital, became convinced that the features of the disease were different in many particulars from those observed in alcoholic multiple neuritis, and on the 21st of November announced before the Manchester Medical Society the startling fact that he had found arsenic in the beer used by many of the patients and that the neuritis was due for the most part to this toxic agent.

Dr. Reynolds' results have been amply verified since by Drs. Delépine and Tattersall, both of whom had suspected the nature of the peculiar poisoning and had found arsenic in the beer on November 16th, and reports from various parts of Lancashire and the Midland counties indicated that the poisoning was very widespread.

It is gratifying to learn that Drs. Delépine and Tattersall took immediate steps toward ascertaining the source of the poisoning, and on November 23d were able to notify the medical authorities of Manchester and of Salford that one

particular brewing house was using glucose which contained arsenic. Suffice it to say that the brewers themselves took prompt action in notifying all of their customers of the trouble.

From the clinical standpoint many interesting features of the epidemic were brought out. The general aspect of the patients was characteristic. The face was dusky and the eyes watery and the well-known puffiness of the under eyelids marked in many cases. The involvement of the skin was almost universal. This consisted of an irregular pigmentation, often ascribed to dirt, which at times closely suggested the bizarre coloring of Addison's disease. Herpes, erythematous and papular eruptions were common. In some there was a bran-like desquamation of the skin. In others the cuticle was thickened and the nutrition of the nails markedly altered. The nervous system was affected in all cases. Numbness, tingling, pain and cramps with final paresis or paralysis were distinct. Tremor was common. The knee-jerks were diminished or abolished in the greater number of patients. The upper respiratory passages were invariably affected. Coryza or distinct catarrh was universal. The digestive disturbances were of irregular occurrence; diarrhea, epigastric pain, anorexia and vomiting were present in varying degrees. The urinary organs did not seem to participate to any great extent in the poisoning.

It seems probable from the reports from various practitioners in the affected region that this form of poisoning has been going on for six months. Beer drinkers were those generally affected, although according to Dr. Kelynack's note, in one locality, drinkers of stout were also taken ill. The chief sufferers have been the poorer classes, as they are the main consumers of the cheaper varieties of beer. The chemical analyses of the beer showed that the amount of arsenic found varied from 1/100 to 3/10 of a grain to the gallon.

Of the source from which the arsenic was derived much might be said that would have a wide application. It is well known that sulphuric acid is universally used in the manufacture of glucose, which latter is an indispensable agent in the manufacture of beer. This sulphuric acid is generally prepared from iron pyrites which invariably contains a small percentage of arsenic. Thus the chain is complete, arsenic from the pyrites, to the acid, thence to the glucose and to the beer.

What bearing has this on the beer industries of this country? It is said that more glucose is made in the United States than anywhere else, but we are glad to be informed that the commercial glucose supplied to the American trade, largely by the American Refining Company of Chicago, is made from arsenic-free sulphuric acid. In an informal discussion at the last meeting of the Society of Chemical Industry, November 23, 1900, a number of chemists connected with brewing interests in this city came to the conclusion that inasmuch as the sulphuric acid of this country was a superior article that there was little likelihood of there being any danger lurking in American beers.

In view of the fact, however, that glucose is more widely used here than almost anywhere else, it is incumbent on our State analysts to make steadfast efforts to ascertain the presence of poisonous impurities; especially so, since the recent developments which have come to light on the use of glucose as an adulterant in the molasses industry.

ECHOES AND NEWS.

NEW YORK.

Building for Marine Hospital Service.—In Secretary Gage's estimate of expenses of the Government for the coming year $250,000 is asked for a Marine Hospital Building in New York.

Smallpox Situation.—A few more patients suffering from smallpox are found each day. The total number now reaches in the neighborhood of 60. At least 100,000 people have been vaccinated and sore arms are the rule throughout the city. Present indications point to a speedy end of the local epidemic, though isolated cases will probably come to light every now and then for some time to come.

Counter Prescribing and Poisonous Mixtures.—Oscar Epstein, druggist, of One Hundred and Sixty-third Street and Forest Avenue, sold some cough medicine which, it is alleged, caused the death of the infant child of a manufacturer of Trinity Avenue. The Coroner's physician for that district said that the druggist told him that he had been employed in a drug-store in Staten Island, where the proprietor manufactured a cough mixture such as was given to the child. This cough mixture, he told Dr. Reigelmann, contained 80 ounces of laudanum in every 420 ounces. Which is the more guilty person, the druggist who prepared the mixture or the father who bought it, is difficult to determine.

Obituary.—Dr. Edward A. Smith, of No. 105 East Eighteenth Street, died December 10th at the age of seventy-one. Dr. Smith was a member of the Union, Metropolitan, Racquet, and Players' Clubs, and of the Society of Colonial Wars.

Dr. George B. Banks, a prominent physician of Huntington, L. I., died December 11th from rheumatism. He was seventy-five years old. Dr. Banks was at one time President of the Board of Education, and was later Commissioner of Highways. He is survived by three daughters and a son.

Pure Food Movements.—The Board of Health recently opened a war on adulterated molasses which, according to Commissioner Murphy, is being sold throughout the city as the pure article. The action of the board is based on a movement in behalf of pure molasses, the agitation of which is now going on in New Orleans. Wholesale dealers say that so extensive has become the sale of the adulterated article that there is practically no call for pure molasses from grocers, who find larger profits by buying the adulterated article and selling it for the pure. Glucose is said to be the most common adulterant. Besides this admixture there are brands of molasses that are bleached with chemicals injurious to health.

New York Hospital Additions.—New buildings for the New York Hospital were opened last week. By the purchase of land and buildings on the west enlarged ground area was gained for them, and by rearranging the whole north front the possibilities of important additions were secured. The group consists of a private patients' building, a dormitory building for employes, ambulance departments, governors' building, and out-patient department. The largest building is the private patients' building. This is ten stories high, and, as it is equipped with modern elevators, the upper rooms are even more desirable than the lower ones. The first floor is used for executive purposes, the second mainly for the doctors, while the stories above are arranged for private patients, having reception rooms, pantries, bathrooms, and every comfort desirable. Many of these rooms are arranged in suites for those who desire complete accommodation; but there are a large number of single rooms for those who need privacy at a moderate outlay. On the upper floor are two operating-rooms, each with its separate etherizing-room, wash-rooms, sterilizing-rooms, nurses' rooms, etc., and each provided with its own ventilating plant controlled by thermostats in the rooms. At the rear of this building, separated from it and reached by special elevators from the yard, is an isolating department with toilet, baths, pantries, and disinfecting apparatus. It has its own heating and ventilating system, independent of the rest of the building.

Rating of Physician Candidates.—An important change in the manner of rating the standing of physicians who are candidates for positions in State institutions has just been made by the State Civil Service Commission. It has decided to accept in lieu of the examination heretofore required the examinations for license to practise medicine in this State conducted under the authority of the University of the State of New York, and to enter accepted applicants for such positions upon the eligible list in accordance with the ratings obtained by them in the examination for license to practise. In conformity with this determination an eligible list will be prepared on December 15th containing the names of persons whose applications have been accepted prior to that date, and new lists will be made up from time to time in the same manner whenever required. The positions are open to men and women. The salary in most cases is $600 a year and maintenance.

New York Academy of Medicine.—At the meeting of the Academy of Medicine held December 6th the following nominations of officers for the ensuing year were made: For president, Dr. Wm. H. Thomson, Dr. A. A. Smith, and Dr. Robert F. Weir; for vice-president, Dr. Virgil P. Gibney, Dr. Thomas Satterthwaite, and Dr. Chas. L. Dana; for secretary, Dr. Jno. H. Huddleston; for corresponding secretary, Dr. Louis Faugères Bishop; for trustee, Dr. A. A. Smith, and Dr. E. L. Herrick; for committee on admissions, Dr. Francis Torek, and Dr. Van Duzen Young. Polls are open December 20th from 8 to 9 P. M.

Surgical Section Nominations.—Nominations of officers for the Surgical Section of the New York Academy of Medicine were made at the meeting of December 10th, as follows: For chairman, Dr. John B. Walker and Dr. Charles L. Gibson; for secretary, Dr. Edward M. Foote was named. The election will take place at the meeting on the second Tuesday of January.

PHILADELPHIA.

Samuel D. Gross Prize.—The Philadelphia Academy of Surgery announces the Samuel D. Gross prize of one thousand dollars. No essay which the trustees deemed worthy of the prize having been received on January 1, 1900, they hereby announce that the prize will be awarded on October 1, 1901.

The conditions annexed by the testator are that the prize "Shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens." It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery. The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 S. 13th St., Philadelphia," on or before October 1, 1901. Each essay must be distinguished

by a motto and accompanied by a sealed envelope bearing the same motto, and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

W. W. Keen, M.D.,
J. Ewing Mears, M.D.,
J. Chalmers Da Costa, M.D.,
Trustees.

Ambulance Surgeon Injured.—While the ambulance of St. Agnes' Hospital was conveying a patient to the hospital recently the front axle broke. Dr. O'Neill, the ambulance surgeon, jumped, but, becoming entangled in the reins, fell and severely injured one of his ankles.

Hospital Physicians Dine.—The fourteenth annual dinner of the Association of ex-Resident and Resident Physicians of the Philadelphia Hospital was held last week at the Bellevue, more than 50 members being present. The officers are: President, Dr. E. L. Dyer; Vice-Presidents, Drs. H. C. Wood and J. K. Lineaweaver; Secretary, Dr. E. R. Stone.

Faith Curists Sentenced.—Sheets and Sollenberger, proprietors of the "Beulah Orphanage," have been sentenced to three months in prison. The case grew out of the death of a seven-months-old child at the Orphanage last July. Sollenberger stated that he considered medicine a poison to the human system and that he believed in leaving ill persons in the hands of the Supreme Being. In passing sentence the Judge stated that the previous good reputation of the defendants had much to do with determining the length of imprisonment imposed.

Diseased Cattle Sent to New Jersey.—The Board of Health of Trenton has begun suit against the Trenton Abattoir Company to collect penalties for bringing diseased cattle into the State. Nearly a score of cows from Bucks Co., Pa., were condemned as tuberculous and killed. Some of the members of the Pennsylvania State Board of Health who were helping investigate the case state that New Jersey is practically made the dumping-ground for diseased cattle from this section of the State, because of the laxity of her laws.

Obituary.—Dr. Frederick W. Pleibel, one of the oldest practising physicians in the northeastern section of the city, died last week in the German Hospital. Dr. Pleibel was born in Germany. He came to this country in 1846, graduating from the University in the same class as the late Dr. Pepper.

Norristown Insane Asylum.—The Trustees of this institution are divided on the question of retaining Dr. Susan J. Tabor, resident physician of the female department. Charges of destruction of property and of lax discipline have been made and investigated. It is claimed that cliques of nurses existed and that deserving and capable new nurses have been obliged to leave on this account. As eight of the eleven trustees voting favored dismissal, an election has been ordered for January 4th. Members of the Board living in this city believe that such action is unwarranted.

Hygiene in Public Schools.—The Committee on Hygiene of the Board of Education has reported that the trial of screens to remove the dust from air before it is used for ventilating purposes has given very satisfactory results. This will likely lead to their introduction in all schools where blowers are used for ventilation. The inauguration of a system of physical training in the elementary schools is under discussion. The German-American Central Alliance has offered to furnish free of charge an instructor in calisthenics in any school named by the Board.

Suspension of Prolapsed Rectum.—Dr. Charles P. Noble, of the Kensington Hospital for Women, reports two cases of prolapsed rectum in which good results were obtained by suspension. An incision was made in the left inguinal region as for colostomy. The rectum was then brought up and sutured to the abdominal wall, preferably to the rectus muscle. Great relief is afforded by this method. Some constipation persists, this being more marked in one of the cases than in the other. Laxatives should be judiciously used to prevent this. Dr. W. J. Hearn also reports a similar case, operated upon in 1895, the patient being made very comfortable. In his case an assistant held up the bowel during the operation by the hand introduced through the anus.

Report of School Medical Inspectors.—A report covering the time from the inauguration of the system, January 1st to October 31st, has been made. The number of cases reported was 5876, of which 3446 were contagious. More than 1000 cases of defective vision were found. In addition to discovering diseases not before noticed, the report states that medical inspection has caused parents to exercise greater care in keeping at home children who otherwise would have been a menace to the health of their schoolmates. The inspectors have completed their organization with Dr. J. H. McKee as president, and Dr. F. C. Hammond as secretary and treasurer. Stated meetings will be held to discuss matters pertaining to school hygiene.

Mosquitoes and Malarial Parasites.—At the meeting of the College of Physicians, December 5th, Dr. A. E. Woldert read a paper giving the results of experiments in cultivating the malarial parasite in mosquitoes. The larvæ of the Anopheles were secured and the adult mosquitoes allowed to bite persons having malarial fever. In some instances the malarial parasites in their developmental stages were found when the mos-

quitoes were dissected. The Anopheles was found in every malarious district visited, but malaria was not present at every place where this species of mosquito was to be obtained. The Anopheles was found in the healthy Mt. Pocono region, which is 3000 feet above sea level.

Unusually Low Death-Rate.—The number of deaths during the week ending December 8th was 376, a very low mortality for this season of the year. This is in part attributed to the strict enforcement of laws regarding the reporting and isolation of cases of contagious disease, one physician being prosecuted during the past week, for failing to report a case of diphtheria. The corps of medical nuisance inspectors of the Bureau of Health is also to be credited with doing much to suppress disease epidemics. Smallpox has been practically stamped out.

Report of State Board of Health.—The annual report of the State Board of Health, which has just been issued states that the most important subject of legislation at the present time is the institution of safeguards for public water supplies. The last Legislature recognized two facts: First, that the State has the right to exercise control over public waters and to forbid their pollution; second, the State Board of Health is the proper body to enforce this authority. This law applies only to cities of the first class and efforts are being made to have it extended. The report calls attention to the necessity for this, inasmuch as typhoid fever is a disease of the small village rather than of the large city. The epidemic at Cementon emphasizes the importance of a sanitary inspection of a water supply before its introduction rather than after its use. Cementon was rejoicing in a pure (?) spring water supply. An inspection showed sources of pollution on a stream supplying the dam from which water was pumped to the reservoir. Typhoid fever has made its appearance in all the families which have used this water. A sanitary survey of all the waters of the State is urged. Norristown is recognized as the principal source of pollution of the Philadelphia water supply, and the courts will be asked to interfere if the nuisance is not abated.

Concerning school directors the report says: "The law authorizing school directors to assume certain functions of a board of health is still on trial. The fact that during the past year only twenty-four school boards have availed themselves of this opportunity to aid in the protection of the public health would seem to indicate that it does not commend itself to the great body of school directors throughout the State. The entire number which have reported to the board as having assumed their new responsibilities is but fifty-six out of a possible two thousand seven hundred."

The total number of cases of smallpox officially reported as having occurred in the State during the epidemic which began in December, 1898, is 1429 with 18 deaths. The report calls attention to the fact that the State Board favors the placing of pulmonary tuberculosis in the class of contagious and notifiable diseases.

CHICAGO.

Epileptic Colony for Illinois.—After the members of the State Board of Charities voted last week to locate the new State epileptic colony, created by an act of the last Legislature, at Notchcliff, near Elsah, in Jersey County, conditional upon the people of that community agreeing to the conditions imposed by the Board in connection with locating the colony.

Bogus Medical Diploma Men Convicted.—A verdict of guilty was rendered in the United States District Court to-day against James and Thomas Armstrong for using the mails to defraud in connection with their diploma mill, the Metropolitan Medical College.

Chicago Sanitary Trustees.—Alexander T. Jones, the newly-installed president of the Board of Trustees of the Sanitary District, has hurled defiance at the local Democratic machine in terms regarded as a declaration of war without quarter. Mr. Jones said in substance that he would not be subservient to the wishes of the Democratic machine, but considered himself answerable solely to the people; and the utterance brought dismay to the hearts of "the gang," for Mr. Jones went further and promulgated plans which will reduce the annual expenditures of the Sanitary District by about $75,000.

Eye Disease in Chicago.—A disease of the eye, which in many respects resembles "pink-eye," is reported epidemic in this city. It is infectious, and is not confined to any particular part of the city or class of people. One explanation offered for the origin of the malady is that it is due to the clouds of dust which have been driven about the streets since the windy season set in.

North Central Illinois Medical Association.—The twenty-seventh annual convention of this body met at La Salle, December 4th and 5th. The program included discussions on various topics of special interest to the professions of medicine and surgery. A reception and banquet were given the delegates at the Harrison House by the doctors, dentists, and pharmacists of La Salle and Peru. Addresses of welcome were delivered by Mayor W. F. McNamara, on behalf of the citizens of La Salle, and by Dr. H. Ziehing on behalf of the local medical fraternity. The principal addresses of the evening were made by Dr. J. B. Murphy of Chicago and Dr. P. M. Burke of La Salle, President of the Association. The following officers were elected for 1901: President, Dr. F. O. Robinson, Wyault; First Vice-President, Dr. John Ross, Pontiac; Second Vice-President, Dr. Jane Reed Keefer, Sterling; Secretary and Treasurer, Dr. George Discus Streator.

Gives Warning of Smallpox.—The weekly bulletin of the Chicago Health Department gives

warning of the danger of smallpox and some figures on the prevalence of the disease. It quotes the federal health reports of November 23d last as showing 297 cases reported this year in Wisconsin, as against none during the same period in 1899. Out of thirty-seven infected States and Territories listed in the same table, in twenty-two a total of 4854 cases is reported this year, as against 1076 cases in the same period—that is June 29th to November 23d—last year. This is an increase of more than 350 per cent. In nine of these States, namely, Iowa, Nebraska, New Hampshire, New Jersey, North Dakota, South Carolina, Utah, Vermont, Wisconsin, no case of the disease was reported during the period of 1899. Illinois has 121 cases reported this year, as against seven last year; of the total 117 are reported from Cairo and four from Chicago. The bulletin continues: "These data indicate an impending epidemic of smallpox, which can be averted only by a general and individual resort to vaccination—the one sure and sufficient safeguard against this pestilence. Since the data of the federal report quoted the spread of the disease has rapidly increased—especially in the Northwest in territory tributary to Chicago. Returns to the Chicago Registrar of Vital Statistics show a total of 1751 deaths for the month of November, 1900.

GENERAL.

Owen's College, Manchester.—The late Dr. D. J. Leech, Professor of Materia Medica and Therapeutics in this institution, leaves £10,000 to endow a chair of materia medica and therapeutics.

A Virus for Rats.—Experiments of the Marine Hospital Service with the Danysz virus No. 2 seem to demonstrate it to be an excellent means for getting rid of rats and mice. Eight days seemed enough. In view of San Francisco's plague cases it is probable that the virus may be largely used.

Diphtheria Cases in School District.—Dr. I. C. Gable, County Medical Examiner of York, Pa., has made a thorough investigation of the diphtheria scare in the Broadbeck school district and reports 100 cases. He attributes the sickness to gross carelessness.

Bequest to Cleveland Hospital.—H. M. Hanna, brother of Senator Hanna, has given the Lakeside Hospital $81,580. He turned over to the trustees 1000 shares of Northern Pacific preferred stock valued at the present time at this sum.

Pan-American Medical Congress.—In view of the unsettled conditions of the yellow-fever situation in Havana it has been decided to postpone the meeting of the Pan-American Medical Congress. February 5, 1901, has been proposed as the most advisable date.

Yellow Fever in Mississippi and Louisiana.—Since the frost no new cases of yellow fever have been reported. From a series of investigations made of the towns about Natchez, Osyka, and Brookhaven, it seems probable that there has been much more yellow fever than has been supposed. Some five cases have been reported forty miles south of Natchez on the river in Louisiana. A large number of peculiar epidemic jaundice cases have been reported from McComb's Dam, Miss. Unless active measures are taken next spring may see a recrudescence of yellow fever.

Another Bubonic-Plague Death in San Francisco.—Another death from bubonic plague is reported from Chinatown. Quarantine against San Francisco will continue to be enforced at El Paso and on the western border of the State for an indefinite period. Louisiana and other Southern States have become alarmed at the prolonged existence of the disease in San Francisco and a general quarantine by all the Southern States may be declared against the infected city.

To Combine Toronto Medical Schools.—Definite steps are being taken to bring about the amalgamation of Trinity Medical College, Toronto, and Toronto Medical College. Representatives of the two faculties have held a meeting in the Premier's office, Toronto, and a committee composed of three members of each faculty was appointed to draft a definite basis of amalgamation.

Surgeons, Dentists and Veterinarians for the Army.—In the new Army Bill discussion amendments were passed bearing on the appointment of fifty volunteer surgeons, ranking as major, and of fifty assistant surgeons with rank of captain; thirty dental surgeons, of whom three should be chief dental surgeons, and a corps of veterinary surgeons.

Crime in the United States.—Criminology and sociology rest so largely on the medical aspects of individual psychology that some recent statistics on murder in the United States gathered by the Chicago *Times-Herald* is of special interest. The average yearly number of murders, computed on the number for the last decennial, in the different States in the Union is as follows: South Carolina, 221; Georgia, 381; Florida, 157; Ohio, 332; Indiana, 228; Illinois, 315; Michigan, 205; Wisconsin, 154; Minnesota, 159; Iowa, 202; Missouri, 362; North Dakota, 29; South Dakota, 45; Nebraska, 168; Kansas, 235; Maine, 18; New Hampshire, 9; Vermont, 6; Massachusetts, 96; Rhode Island, 52; Connecticut, 73; New York, 512; New Jersey, 120; Pennsylvania, 312; Delaware, 48; Maryland, 280; District of Columbia, 24; Virginia, 305; West Virginia, 87; North Carolina, 285; Kentucky, 398; Tennessee, 408; Alabama, 461; Mississippi, 317; Louisiana, 358; Texas, 1021; Arkansas, 305; Montana, 90; Wyoming, 22; Colorado, 252; New Mexico, 58; Arizona, 43; Utah, 57; Nevada, 39; Idaho, 27; Washington, 102; Oregon, 79; California, 422.

Metric System Coming.—The bill of Representative Shafroth of Colorado for the adoption of the metric system by the United States was

favorably reported last week by unanimous vote of the House Committee on Coinage, Weights and Measures. The bill is changed so as to make the system go into effect January 1, 1903.

Typhoid Fever at Galveston.—Galveston is reported to be threatened with an epidemic of typhoid fever. There is a great deal of sickness prevalent in the city and physicians say that the majority of patients have developed typhoid symptoms. A number of cases have occurred among persons living on the water-front. There are twenty-one cases now under treatment in St. Mary's Infirmary, and seven at the Sealey Hospital, and more would be at the hospital if rooms could be obtained. The outbreak and spread of the disease are due to the unsanitary condition of the city, and the impurity of the cistern water, the only means of supply for many families. Many persons are crowded together in buildings and tents that barely protect them from the inclemencies of the weather.

To Prevent Tuberculosis.—The German Department of the Interior has issued a set of instructions conveying compulsory precautions to be taken against the spread of tuberculosis in the empire. The instructions consist of seven articles, providing that doctors, under all circumstances where their patients have lung or larynx tuberculosis, must give written notice to the police as soon as the case in question has been diagnosed; that immediately after the death of a person from this form of the disease the room he used and his effects must be thoroughly disinfected; that professional women who lay out the dead must report at once in writing to the police authorities whether the disease was of the lungs or larynx; and that keepers of hotels, lodging-houses, asylums, or other public institutions, shall report immediately the appearance of the disease in the establishment under their control. Non-compliance with these regulations is subject to a fine of $35.70 or six weeks' imprisonment.

Cocaine Drunkenness.—Chief of Police Caster of New Orleans issued instructions to the police last week to arrest all persons dealing illegally in cocaine or suffering from cocaine drunkenness. The order said: "The constant use of cocaine has assumed large and serious proportions and is daily increasing to such an extent as to be a menace to public health. You are directed to notify the force under your command to use extreme diligence in enforcing the city ordinance against the use of cocaine and to make arrests. This menace is general throughout the city. This order must be strictly adhered to, and you will make written reports to this office of each offender arrested and from whom the drug was purchased, whether from a druggist or pedler." The complaints against the abuse of cocaine have been very loud for some time, thousands of persons, mainly negroes, using the drug and injuring themselves physically and mentally by it. Some drug-stores confine themselves almost wholly to the sale of cocaine, but the bulk of it is sold by pedlers in either pellets or in powder to mix with wine. Under instructions from the Mayor and Council the police will try to break up the abuse and banish cocaine from New Orleans.

Typhoid in the Army.—Surgeon-General Sternberg made public December 7th a report upon the origin and spread of typhoid fever in the United States military camps during the Spanish war of 1898, prepared at his instance by a board consisting of Major Walter Reed, Surgeon, U. S. A.; Major Victor C. Vaughan, Division Surgeon, U. S. V.; and Major Edward O. Shakespeare, Brigadier-Surgeon, U. S. V. The Surgeon-General prefaces the report by calling attention to the vast amount of work the medical corps was called upon to perform during the war, in order to cope with the tremendous increase of the army in the field, and comments upon the wide-spread prevalence of typhoid in 1898, 20,000 cases of this disease appearing among the troops encamped within the limits of the United States, from May until September of that year. A general summary of the conclusions reached by the Board indicates that during the Spanish war every regiment constituting the first, second, third, fourth, fifth, and seventh army corps developed typhoid fever, this being true of both the volunteer and regular commands. More than 90 per cent. of the volunteer regiments are shown to have developed typhoid within eight weeks after going into camp, and the fever developed also in certain of the regular regiments within three to five weeks after the tents went up. Typhoid became epidemic in all camps, large and small, North and South, and was found to be so widely distributed in this country that one or more cases are likely to appear in any regiment within eight weeks after assembly, whether on the march or stationary. It is also stated that, with typhoid fever as widely disseminated as it is in this country, the chances are that if a regiment of 1300 men should be assembled in any section, and kept in a camp having the most perfect sanitary conditions, one or more cases of the fever would develop. The Board condemns in general the methods of disposing of the excretions of the human body, holding that a lack of proper facilities in this respect was in large measure responsible for the prevalence of the fever in the camps. Infected water was found to be an unimportant factor in the spread of typhoid in the national encampments of 1898. The part played by flies in the dissemination of germs of the disease, however, was plainly evident. Except where urgent emergency makes it necessary, the Board urges that one command should not be located upon a site recently occupied and vacated by another. It is urged that the soldiers' beds should be raised from the ground, for the men are reported to have slept in dust piles possibly infected with typhoid germs; and also that the soldiers be made to remove their outer clothing at night, wherever possible.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, December 1, 1900.

ANNUAL REPORT OF THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS—PROF. CALMETTE ON ANTIPLAGUE SERUMTHERAPY—VITAL STATISTICS OF NEW SOUTH WALES—DECLINE OF THE BIRTH-RATE—THE "RATIONAL DRESS" MOVEMENT—THE MISTAKES OF THE WAR—FAILURE OF THE GOVERNMENT TO PROVIDE A MEANS OF BOILING WATER—SUCCESS OF THE MOSQUITO-PROOF HUT IN THE CAMPAGNA IN PREVENTING MALARIA—PROF. GRASSI'S SCHEME TO RID ITALY OF MALARIA—THE LEGAL PERILS OF MEDICAL PRACTICE—REVERSAL OF AN UNJUST VERDICT.

The annual report of the Council of the Royal College of Surgeons which has just been issued shows that there are 1221 Fellows and 17,510 Members, which is considerably more than half the names on the Medical Register. The experimental and chemical departments of the research laboratories of the Royal Colleges of Physicians and Surgeons have been completely reorganized. By the provision of a considerable quantity of apparatus they are now well equipped for carrying out research work. Here is prepared the serum for the treatment of diphtheria in the Metropolitan Hospitals. The mixed serum now issued averages 300 units per c.c. In the year 10,999 doses, each containing 4000 units, 24,408 doses, each containing 3000 units, and 725 doses, each containing 2000 units, have been supplied. In reference to the Library the supply of new volumes and journals has been fully kept up. The inflow of volumes is now estimated at about 1000 per annum, including journals and transactions, and the total number of volumes is well over 50,000. The library is particularly rich in the transactions of societies and in periodicals relating not only to medicine and surgery, but also to accessory sciences. The large illustrated works of zoology, anatomy, etc., are well represented. There is also a good collection of portraits of eminent members of the profession. The second Harben lecture was delivered at the examination hall of the Royal College of Surgeons and Physicians by Prof. Calmette, Director of the Pasteur Institute of Lille, who discussed antiplague serumtherapy. In all cases, he said, the infection whatever its mode of entry resulted in the multiplication of the plague bacillus first in the lymphatic channels, then in the blood. Even a few hours after infection the bacilli were found in the blood and in immense quantities in all the organs. The serum should provoke their rapid destruction by phagocytosis or bacteriolysis. Hence the slow absorption of serum injected subcutaneously failed to arrest the disease; but when injected into the veins the result was different. Four or five hours afterward the temperature dropped, rising again in eight or twelve hours and then dropping finally. The temporary rise corresponded to the period during which the bacilli were being removed from the circulation by the leucocytes. Antiplague serum contained a reacting substance which enabled the leucocytes and alexins of the blood to dissolve the bacilli. There was no danger attached to intravenous injections if given slowly and with care to avoid the introduction of air or septic particles. The serum was the best known remedy for curing plague. It was equally useful as a preventive, though, unfortunately, its action lasts only eight or ten days and therefore the injections should be repeated every week. At Oporto and Glasgow it had been established that inoculated persons who contracted the disease within the immune period had only slight symptoms and always recovered. The preventive injection, which should be made under the skin of the abdomen in a dose of 10 c.c., occasionally caused eruptions and sometimes joint pains, but these symptoms were transient. Above all the serum had the immense advantage of conferring immunity in a few hours.

The Government of New South Wales' report on the vital statistics for 1899 contains several items of interest. The population at the end of the year was 1,356,650, an increase of 22,810 on the preceding year. The marriage-rate was 6.89 per 1000, the highest since 1891. But the average number of children in a family has dropped from 5.26 to 4.04. The birth-rate was only 27.10, the lowest recorded. An investigation into the cause of this decline showed that (1) the proportion of fertile marriages is declining; (2) that among fertile women the birth-rate is diminishing; (3) that Australian women are less fertile than European immigrants. Illegitimate births have been steadily increasing and now amount to 7.16 per cent. of the total. The death-rate is 11.82, which is 0.61 below the mean rate of the last ten years. The death-rate from phthisis has fallen from 14 per 10,000 in 1899 to 11. Cancer shows an alarming increase; in 1860-64 the rates were 1.84 and 2.17 per 10,000 respectively for males and females: in 1895-99 they were 5.18 and 5.08.

The "rational dress" movement does not make much progress among our female population, but its disciples are enthusiastic and zealous in endeavoring to propagate their views. The "Rational Dress League" has just had a grand field night on the occasion of their annual public meeting. Believing that example is better than precept, the ladies gave a practical demonstration of the superiority of the knickerbocker over the ordinary skirt in active pursuits, whether work or play, especially in riding the diamond-frame bicycle. Attired in costumes of various tints the fair demonstrators afforded a curious study. Some looked charmingly pretty, others unfortunately did not; but all were actuated by a zealous desire to show the aims of the League. Viscountess Harberton addressed the spectators. She

said that the necessity for vigorous propaganda had been rendered greater by the almost universal adoption of the filthy and disgusting trailing skirt with which ladies swept up the dirt of the street, inconsiderately carrying it to the drawing-rooms of their friends. She would rather be hooted by unmannerly boys than run the risk of breaking her neck by riding a bicycle in ordinary costume. A medical man discoursed on the disadvantages of corsets and asserted that there was far too much material about the skirts of some members of the League. He did not advocate tights, but if something could be devised between tights and the superabundant accordion arrangement of present-day skirts it would be hitting a happy mean.

At the inaugural meeting of the Midland Pharmaceutical Society Dr. Green, who had recently returned from the front, gave an interesting address on his experiences and exposed the mistakes of the war from a sanitary standpoint. The greatest lack of the entire campaign was a means of boiling drinking-water—the only certain method of preventing typhoid fever. Filters were provided, but they were insufficient in number and liable to leakage. This was the greatest mistake of the whole campaign. No gun, no luggage, no machinery was too heavy or too cumbersome if required to assail the enemy, but for the defence of the troops against a foe far more deadly than Mauser bullets or shrapnel shells a few necessary boilers were too great impediments to be allowed. No man should have been allowed to drink unboiled water.

The experiment carried out by Drs. Low and Sambon of the London School of Tropical Medicine—living for some months in a mosquito-proof hut in the fever-stricken Roman Campagna—has been completely successful, and they have returned to London in unimpaired health. The spot where the hut was built was carefully selected by Italian experts as the most malarial part of the Campagna. An interesting fact in this connection is that 16 policemen, who visited Ostia at the time of the assassination of King Humbert in order to search for anarchists supposed to be hiding there, were all prostrated with fever, although only in the place for a few hours at night. Neither the English doctors nor their servants showed the slightest symptoms at any time. Professor Grassi now proposes to rid Italy of malaria by making every house in the affected districts mosquito-proof with wire-netting and insisting on all persons retiring inside at sunset and remaining in until sunrise—the hours during which the mosquito bites. Those already ill he will cure with quinine. According to him, one year ought to be sufficient to stamp out the scourge. But as some 2,000,000 ignorant people are concerned he gives himself five years.

The very unjust verdict by which a medical man was mulcted in $400 damages and costs for informing a relieving officer of the unsound condition of a woman's mind has been reversed in a higher court. I have already informed you of the facts. The woman had hallucinations, sent threatening letters to people, and thought herself bewitched. As she was a qualified pharmacist and was seeking a situation as such, the doctor rightly thought her a danger to the public and acted accordingly. Hence the monstrousness of the penalty imposed on him. The jury thought that some of the allegations made by the doctor were untrue and, while accepting the view that her mind was not sound, found that the doctor was actuated by malice. In the higher court the judges did not agree with the jury on any point and found that there was no evidence of malice.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

VAGINAL HYSTERECTOMY—SEQUELAE OF HEPATIC HYDATIDS—THE THIRD CARDIAC SOUND—ANOMALOUS ECTOPIC GESTATION—REPEATED ECTOPIC PREGNANCY—INFLUENCE OF THE EYE ON THE DEVELOPMENT OF THE ORBIT—ETIOLOGY OF LAMELLAR CATARACT—ABDOMINAL RESECTION OF THE SIGMOID AND OF THE UPPER RECTUM—EVACUATION OF HIGH PELVIC ABSCESSES THROUGH THE ILEOCOSTAL SPACE—INCONTINENCE OF URINE IN THE FEMALE—CONTROL OF THE UTERINE ARTERIES IN ABDOMINAL HYSTERECTOMY.

A. H. N. LEWERS, at the Royal Medical and Chirurgical Society, November 13, 1900, submitted the after-results of forty consecutive cases of vaginal hysterectomy for cancer. His custom has always been to examine most carefully under anesthesia each woman, in order to determine whether or not the neoplasm had extended beyond the uterus itself, and then to operate only when it is so confined. The point held is that extension by contiguity always means prompt local recurrence and large cancers, though local in the womb, usually have metastases. His patients have been under his care for two to seven years after interference and present the following statistics: Twelve cases have been up to the present without recurrence; eighteen suffered from return of the growth and four died; three had passed out of his knowledge; two remained without settled diagnosis; and one had primary tuberculous ulceration of the cervix uteri. Omitting one case in which about one year had elapsed, the other eleven gave very satisfactory results for periods ranging from two to seven years or over. His conclusions are that vaginal hysterectomy is a most promising operation when done early enough, and that early diagnosis rests upon careful examinations and minute attention to cases giving a history of irregular bleeding at any period of life and particularly about the menopause. If women better understood the possibilities behind this symptom many would seek advice early enough to receive prolonged and in a few instances permanent relief.

N. DALTON, at the Clinical Society of London, November 9th, discussed the following sequelæ of a case of hydatid cysts of the liver. The girl at the age of eleven years was admitted to the Great Ormond Street Hospital in the service of Dr. Barlow for hydatid cysts of the liver. She then passed hydatids *per rectum* and coughed up bile. Complete freedom from symptoms followed until her sixteenth year when she came under the writer's care for ascites at the King's College Hospital. Paracentesis was required every two weeks to relieve the symptoms. Finally an exploratory operation was done in the hope of finding some remnants of the old cyst or other remediable cause of the ascites. Only the adhesions about the site of the old hepatopulmonary fistula were present and the abdomen was therefore closed. During the succeeding two weeks two paracenteses were necessary, but thereafter only the lower hypogastrium contained fluid and the rest of the abdominal cavity appeared to be obliterated by adhesions. For the next five years this continued until a ventral hernia developed in the laparotomy scar and at her twenty-third year caused a fatal septic peritonitis. Post-mortem were found (1) the old cyst cavity opening above by the fistulous remnants into a bronchiectasis and below into a dilatation of the gall-duct; (2) adhesions thickening the mesentery and omentum and obliterating the upper part of the peritoneal cavity; (3) turbid fluid in small quantity in the hypogastrium; (4) pus foci elsewhere in the cavity; (5) thickenings of the capsule of Glisson; (6) cirrhosis extending inward from the capsule. Thus almost complete cure of the ascites appeared ascribable to the numerous adhesions, which mechanically obliterated the cavity and by establishing rich collateral anastomoses between the portal and parietal venous systems relieved the congestion of the liver itself and of its portal blood-supply. The adhesions were probably excited solely by exposing to the air, when the laparotomy was done, the ill-nourished endothelial cells of the peritoneum, precisely as when tuberculous inflammation yields to such access of the air to it. Since the cyst had been virtually cured during the last few years of life the ascites had been due to the cirrhosis which continued as an active process. Probably the ascites of all cirrhoses would cease if good collateral circulation could be excited by adhesions.

T. S. WILSON discussed the diastolic cardiac sound causing spurious reduplication of the second sound at the apex, often called the third sound of the heart. In his opinion the underlying causes appeared to be as follows: (1) This third sound of the heart is not produced by the inrush of blood into the ventricle, although in some cases of mitral stenosis the flow causes a murmur, which is, however, synchronous with the diastole; (2) during the expansion movements, probably, the valve segments are kept tense by the muscular action, but at the moment of relaxation are free to move. If, therefore, a powerful enough stream of blood were still flowing through the valve at this moment of relaxation it would vibrate the valve curtains and cause an audible sound; (3) if this view be correct, the third sound means that the auricle is unable to empty itself as fully or as quickly as normal; (4) such delay in the flow will occur (*a*) when the mitral valve is stenosed and (*b*) when the ventricle cannot in expanding draw off the entire auricular contents; (5) therefore we would look for the third sound (*a*) in mitral stenosis, (*b*) in dilatation of the auricle, and (*c*) when the ventricle is too feeble to empty the lesser chamber. Cardiographs were shown and notes of an autopsy tending to support these views. In life the girl had shown pericarditis, a loud third sound and mitral regurgitant murmur. Instead of a short rise in the cardiographic tracing just at the end of the diastolic decline and during ventricular relaxation, there was a high, pointed rise almost as high as the ventricular rise itself. Apparent all over the heart, it seemed to show that during the relaxation period the ventricle filled up and then partially emptied itself. Ulcerative endocarditis caused death. The mitral valve was found *post-mortem* not stenosed, but certainly incompetent. The ventricular capacity was normal at ninety, while the auricle had one hundred and sixty-four cubic centimeters. Pericarditic adhesions had probably kept the ventricle from dilating and the flow of the large quantity of blood from the auricle had caused the temporary rise in the curve.

E. O. CROFT, at the Obstetrical Society of London, November 7th, detailed a case of anomalous ectopic pregnancy. By abdominal section the sac and its contents were removed which by rupture caused violent hemorrhage, yielding to ligation of the broad ligament. Death by exhaustion followed. At the necropsy no peritonitis was present and the organs were removed for examination. Before rupture the sac had contained the whole fetus about four months old, membranes, placenta and amniotic fluid, but no blood, fluid or clotted. Its relations were those of an ovarian tumor with a short pedicle, with follicles over its surface resembling the Graafian follicles, but no structure corresponding to the ovary could be found. The tube was normal. The uterus and its appendage of the opposite side were normal. No ovarian tissue was certainly diagnosed in the tumor walls, but the case appeared to be an ovarian ectopic pregnancy.

A. H. LEWERS reported a twenty-nine-year-old patient who had never been normally pregnant, but twice had had tubal gestation. In March, 1894, the left appendage was removed, and the tube found to contain a two-month-old fetus at the point of threatened abortion. The ostium of the tube was patent, but not dilated. In May, 1900, she had a complete tubal abortion on the right side, and that tube and ovary were taken out. Complete recovery followed. The ostium of the second tube was widely dilated. Reference was made to J. H. Ferguson's recent paper on this subject in which it is stated that

consecutive ectopic pregnancy is not rare in literature, but only fourteen repeated laparotomies for it are reported. The interval between the first and second impregnations varies from six weeks to five years. Hence this case of the author seems unusually long, over six years. Bland Sutton said that the diagnosis of ovarian ectopic pregnancy rests on two factors, pressure of undoubted ovarian tissue and of positive fetal substance therein. In the absence of demonstrated ovarian stroma and cells, he is inclined to be very skeptical of any so-called ovarian ectopic pregnancy.

W. E. THOMPSON, at the Ophthalmological Society of the United Kingdom, November 8th, read a paper on the disputed question as to whether the eye influences the growth of the orbit. Rabbits were anesthetized and one eye enucleated and later after the animals were full-grown they were killed. Measurements showed that there was a great difference between the two orbits; in all dimensions the normal exceeded the anophthalmic side by fifteen per cent. in the fresh and ten per cent. in the macerated skull. The application of the paper is at once important, because artificial eyes should be promptly inserted.

N. G. BENNETT read a few notes on the cause of lamellar cataract, claiming that there is a relation between dentition and nutrition and this disease. Reference was made to the paper of Bernard Duband and Treacher Collins stating the measurements of lenses during life and after removal. Accepting these ophthalmoscopic and direct observations as authoritative, it became apparent that the lens is attacked by the disease either at or just before birth, or if the onset is later the part of the organ diseased seems to correspond with the periphery of the lens at or before birth. He then described minutely the teeth of twenty-two cases of lamellar cataract he had collected, in two classes on the basis of the degree the enamel had been affected. In each class, taken in conjunction with the dates of calcification as fixed by Röse, the disease appeared to have begun after birth, the period in one class being variable and in the second class about two years later. The exact cause of these conditions has long been a matter of dispute. Referring to a large number of examples of hypoplastic teeth he pointed out that in cases free from lamellar cataract the disease had very evidently begun at much later and irregular periods. When the history is definite it seemed that most of such cases had suffered from exanthemata, whereas the others had had irregular sicknesses like convulsions, malnutrition, etc. Sometimes the teeth would have two or more horizontal depressions, corresponding with the same number of attacks. The inference is that lamellar cataract is a disease of infancy, probably due to malnutrition. The developmental similarity between the teeth and the lens may be significant.

R. MORISON, at the British Gynecological Society, November 8th, described several new operations for gynecological conditions. (1) Abdominal resection of the sigmoid or upper portion of the rectum, applicable to left suppurative salpingitis affecting the rectum and to cancer of the sigmoid mistaken for disease of the ovary. Its steps are as follows: (*a*) The diseased bowel is resected; (*b*) into the proximal stump is tied a glass bobbin carrying distally a rubber tube, which is passed through the distal stump of the bowel and out of the anus; (*c*) traction then telescopes the upper into the lower piece of bowel; (*d*) the distal stump is next tied very tightly to the bobbin just to the anal side of the cut edge of the sigmoid; (*e*) resumed traction now produces a moderate intussusception which is secured by Lembert sutures. In seven to nine days the sloughing bowel and bobbin come away. He has done the operation fourteen times, twice for complicated salpingitis and twelve times for malignant disease. The mortality was 50 per cent., which may be decreased by avoiding doing the operation with a loaded colon. A primary colostomy will avoid this blunder. His second operation is for certain forms of parametric abscess. Such processes may be in the floor of the broad ligament and pointing into the vagina, or in the course of the broad ligament between the two leaves of peritoneum and pointing often above Poupart's ligament, or in the pelvic and iliac glands out of reach from the vagina. He had seen two fatalities follow evacuation of the pus by abdominal section. He has successfully performed the following operation twenty times: Corresponding with the middle third of a line from the middle of the iliocostal space behind to the symphysis in front a three- or four-inch opening into the abdomen is made. Through this the diagnosis is confirmed by palpating the uterus and its adnexa and locating the boundaries of the abscess. The incision is next extended backward to correspond with the prominence of the focus. With the left hand within the abdomen as a guide, the right hand bluntly opens the abscess, free drainage and suitable suture complete the process. His next point was the simplicity and value of first clamping and cutting, then tying the uterine vessels in abdominal hysterectomy. For a patulous and incontinent female urethra he had satisfactorily followed this method: Half-way between the umbilicus and the symphysis a one-inch incision down to the peritoneum is made. The patient is then put into the lithotomy position and an incision encircling the urethra made, joined by one in the long axis of the vagina extended beyond the neck of the bladder. The flaps were dissected off and the urethra and neck of the bladder were freed absolutely and on all sides. Next between the abdominal parieties and the serosa an artery forceps was forced gently down into the vagina. Here it seized the urethra and drew it up into the abdominal wound, where it was secured by sutures. The bladder was drained by a catheter left *in situ* for eight days. The dressings during this time had kept dry and when the catheter was withdrawn it was supposed the bladder might be continent sufficiently to per-

mit a regular use of the catheter. But the organ will hold one and a half pints against cough and ordinary exertion, but can be emptied at will.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting, Held November 8, 1900.

Thomas H. Southworth, M.D., Chairman.

Pyelonephritis.—Dr. Louis Fischer presented a patient who had suffered for years from a purulent condition of the right kidney and who had recovered after nephrectomy. The child, now a girl of twelve, had been healthy from birth until the age of four and had acquired her teeth and learned to walk and talk at the usual time. When four years old she suffered from varicella and then from measles. During the convalescence from the measles it was noted that the urine was frequently cloudy. Ever since that time the child has suffered from recurring attacks of fever often ushered in by chills. This fever did not seem to be intermittent, but was irregularly continuous and the child's general condition was very poor. She was treated for malaria, because of the recurring chills and fever, but without effect. When she came under Dr. Fischer's care a large tumor could be felt in the right ileocecal region, extending from the margin of the liver well down on the crest of ilium. This tumor was hard; evidence of fluctuation could not be obtained. The urine contained albumin and casts, some red blood-cells, but never any pus cells. It seemed probable that the tumor had some connection with the right kidney, but the possibility of its being ovarian in origin was to be borne in mind. The patient presented the usual symptoms of pyelonephritis. There was considerable gastric disturbance, marked anorexia and obstinate constipation.

Operation.—At the operation, which was done through the abdomen instead of through the loin because of the doubt as to the origin of the tumor, the pelvis of the right kidney was found to be a huge pus sac. Tubercle bacilli were not found, nor could any other microbe be demonstrated. Concretions had formed along the abscess-wall. These seemed to be due to secondary calcification of broken-down material within the pus sac. The condition was evidently simple pyelitis. The kidney itself was affected by an interstitial nephritis. The post-operative improvement has been very marked. The other kidney had compensatory hypertrophy and the patient is now passing two pints of normal urine a day. A very interesting symptom that has developed since the operation is the occurrence of ribbon-like stools due to narrowing of the lumen of the gut by inflammatory adhesions. This does not, however, interfere with the girl's general health, nor does it give rise to serious constipation. The condition is not growing worse. The adhesions show no signs of continued contractility and so further narrowing of the lumen of the colon seems improbable.

Surgery of Pyelonephritis.—Dr. S. Marx who operated gave his reasons for choosing the transperitoneal route as follows: (1) Because the tumor was so large that he doubted whether the ordinary lumbar incision would suffice for the delivery and complete removal of the tumor, even if it should prove to be, as was suspected, of kidney origin. (2) There was some doubt as to the diagnosis of the kind of tumor that was present. The possibility of its being an ovarian tumor, either cystic in nature or one of the teratomata, could not be excluded. (3) Physical examination showed that the tumor was attached to the liver and if the adhesions were to be broken up without subjecting the patient to unnecessary risk, the abdominal route would give much more opportunity to work by direct vision. The mortality for the removal of purulent kidneys by the abdominal route in children is more than 50 per cent.

Frequency of Pyelitis.—Dr. Jacobi in discussion said that pyelitis is not so uncommon in children as is usually believed. Some years ago Dr. L. Emmett Holt reported a series of cases and pointed out that their occurrence was more frequent than was generally believed. All kidney diseases in children are more frequent than are imagined. The interesting question in this case is, What was the original cause of the pyelitis? Very frequently pus in the pelvis of the kidney develops as a consequence of the presence of a renal calculus. Certain concretions were found in this case, but they were not considered to be primary calculi. If on being examined, however, they proved to have a uric-acid nucleus it would then seem clear that the calculus was the primary condition in the case. Infants very frequently pass an excess of uric acid during the first two or three weeks of life and the characteristic uric-acid stain on the napkin is usually easy to find. The uric-acid infarcts found in the kidneys of children who die very young point to the excess of this substance. These infarcts emphasize the necessity for giving the child an abundance of liquid during the first days of life so as to aid in flushing out the kidneys.

In closing the discussion Dr. Fischer said that pyelonephritis in children sometimes seems to originate from vulvovaginitis. The micro-organism which causes the external inflammation succeeds in working through the bladder to the ureter and thence to the kidneys. Dr. Baginsky claims that pyelonephritis in children is practically always due to the bacterium coli commune, which probably finds it way into the kidney through the intestinal walls.

Enlarged Thymus.—Dr. Henry Heiman presented a patient with an enlarged thymus. The

child is but three months old and has been in good health ever since birth, which was instrumental in character. Its cry is the noticeable feature of the case. When the child becomes irritable there is a peculiar persistent whine during which cyanosis develops. Physical examination is negative, except for an increased area of dulness over the thymus region, especially over the right lobe of the organ. After this discovery it was found that the lymphatic glands of the neck were somewhat enlarged. This probably represents one of the cases that will prove in after life, if the child should live, to be unsuitable for anesthesia; as the status lymphaticus of such patients usually brings with it a tendency to adenoid overgrowth in the pharynx, this fact must be borne in mind. Two cases of sudden death at Mt. Sinai Hospital within the last few months have proved to be associated with enlarged thymus. In at least one of them hypertrophied lymphoid tissue was found in the intestinal tract.

Dr. Jacobi said that an enlarged thymus cannot always be demonstrated by percussion. In one instance where he was called to see a child that had died suddenly a short time before percussion failed to reveal the presence of enlarged thymus and yet the autopsy proved that it was present. It is important in percussing for enlarged thymus to turn the child over on its face, and have it held up in the arms of the nurse so that percussion can be practised at the favorable moment when gravity brings the enlarged thymus forward against the chest-wall. In cases of enlarged thymus a systolic murmur can often be heard in the median line at the second rib. Growing inspiration is not an unusual symptom in cases of enlarged thymus, but, of course, it may occur in other conditions, as in craniotabes.

Dr. Kerley said that the sudden death which occurs because of enlarged thymus frequently comes on without any preliminary symptoms. The child suffers from a single convulsion and then dies. The most faithful investigation of the child's history will frequently fail to reveal the slightest symptom that may point to the existence of an enlarged thymus before the moment of the fatal issue. One child seen by him was seized with a convulsion while nursing and promptly died. The thymus was found at the autopsy to be four or five times the normal size, yet it had not occasioned a single symptom that would have previously called attention to its presence.

Dr. Libman said that he has recently seen four cases of sudden death in which an enlarged thymus was found at autopsy. One of them died in a dispensary and proved on section to have the status lymphaticus. A second was taken with an attack of laryngismus stridulus, threw its head back and promptly died. An enlarged thymus was found, but the status lymphaticus was absent. Two other patients suffered from enlarged thymus after extensive burns. In each of the cases the children passed from quiet sleep to death without a struggle. The nurse had seen each of the patients within a quarter of an hour before death and they seemed perfectly well. They were found dead, neither outcry nor change of position having been noted. In each patient edema of the thymus gland was found to exist.

Unusual Infantile Scurvy.—Dr. Francis J. Murray read this paper which will appear in a subsequent issue of the MEDICAL NEWS.

Diet and Scurvy.—Dr. Kerley reported histories of twenty-four cases of scurvy that have occurred in his experience. In twelve of these cases the children were being fed on good artificial food formulæ and the diet was above suspicion. In two cases that occurred recently one patient was being fed on raw, the other on Pasteurized milk. The affection is not due to the special character of the food given, but to its malassimilation. The proper food elements for nutrition are not absorbed from the digestive tract in the amounts necessary for healthy metabolism.

Dr. Walter Lester Carr said that the most interesting thing about Dr. Murray's case is the fact that the mere addition of fruit-juice without any special change of diet led to prompt recovery. This question of the necessity for a change of diet, as well as the addition of fruit-juice, is as yet in dispute. Clinical experience seems to indicate that the addition of fruit-juice without any other change of diet suffices to relieve the symptoms.

Acute Rheumatism in Children.—Dr. Henry Heiman said that there has been a good deal of discussion in recent years as to the cause of rheumatism. So many theories of causation have been suggested that there exists more confusion than ever as to the actual etiology of the disease. Some years ago Prout suggested that it was due to an excess of lactic acid in the body. This was a gratuitous theory, however. There is no sure test for the quantitative presence of lactic acid in the blood. More than this, physiology has not yet made certain what is the normal formula of lactic acid in the tissues. Haig suggested uric acid as the cause of rheumatism. Other observers have not been able to confirm Haig's observations as to the presence of an excess of uric acid in the blood of rheumatic patients. Heiman in a series of cases carefully investigated for the purpose never found an excess of uric acid in the urine of those suffering from rheumatic arthritis. The question of the nervous origin of rheumatism put forward by certain American neurologists is no longer considered tenable. The occurrence of rheumatism with special frequency during damp weather led to the formulation of the theory that the disease was miasmatic in origin and that it was due to some organic poison that occurred in the atmosphere during damp weather.

Rheumatism as an Infection.— There are many qualities of rheumatism which point to its infectious nature. Its clinical course, its prodromal

symptoms followed by a rise of temperature, sometimes accompanied by a chill and certain tendencies to self-limitation, class it with the infectious fevers. The pathological changes found in the organs of patients who die during an acute attack of the disease also indicate its infectious character. A certain amount of cloudy swelling has been noticed and an enlarged spleen, hemorrhages into various organs, etc. The changes in the blood are those which occur during infectious fevers as the result of the presence of the toxins of bacteria on the circulation. Singer of Vienna found in a series of cases of rheumatism that a number of micro-organisms were present in the joints and on the heart valves of rheumatic patients. Their morphology was that of the pyogenic microbes. His conclusion was that rheumatism was really a modified pyemia due to the invasion of the system by an attenuated pus micro-organism.

Rheumatism in Children.—In children during an attack of rheumatism there is a lessened liability to joint complications. Frequently the disease causes only pain and as a result rheumatism in children often masquerades under the disguise of harmless growing-pains. At its worst the disease is seldom so severe as in adults and there is less tendency to the development of pyrexia. There is, however, a considerably greater tendency to the occurrence of metastases of the rheumatic virus to various parts of the body. Erythemata, rheumatic purpura, tendinous nodules of inflammation, pericarditis and endocarditis are much more frequent than in the adult. The commonest complication is endocarditis, which children very seldom escape unless the greatest care is exercised in the treatment of attacks of rheumatism. During the course of rheumatism, peptonuria is frequently found. It is caused by the destruction of leucocytes within the system and the elimination of their products through the urine.

Pseudorheumatism.—A number of affections that have been looked upon as rheumatoid in character and have even been given the name of rheumatism should with our modern knowledge of the disease be entirely excluded from the category of rheumatic affections. Formerly one spoke of gonorrheal rheumatism and of the rheumatism which complicates scarlet fever, typhoid fever, erysipelas and other diseases. Now it is known that the arthritis which occurs during the course of these diseases is really due to the specific microbe of primary affection. Our present knowledge of the microbiology of rheumatism shows that, in addition to whatever microbe may play a rôle in the etiology of the disease, the predisposition of the individual is an important adjuvant. Soil, climate and heredity serve to create the predisposition which leads to rheumatic infection.

Occurrence of Rheumatism.—Rheumatism occurs very rarely in patients under three years of age. Some cases have been reported by Jacobi, Chapin, Holt, Henoch and others, in children younger than this. It must be remembered that most cases of so-called rheumatism which develop under one year of age are really scurvy. A few cases of genuine rheumatism have, however, been reported even in nurslings and in some cases it has been noted by competent careful observers that a mother suffering from an attack of acute rheumatic arthritis has given birth to a child with unmistakable symptoms of the same disease.

Treatment.—In children, as in adults, the best remedy for rheumatism is some form of the salicylates. Usually salol or salipyrin will be found effective. Although the salicylates are a specific for rheumatism they fail to cure in certain instances. Other remedies will then have to be employed.

Prophylaxis.—It has been found that quinine given in comparatively small doses will prevent relapses of malaria. It has therefore been suggested that relapses of rheumatism might be forestalled in the same way. Dr. Heiman has tried this method during the past year in a certain number of cases with excellent satisfaction. There is no mention in medical literature of prophylactic treatment for rheumatism, except a recent suggestion of Ewart's, who proposes to use the salicylates somewhat in the same way. Prophylactic treatment consists in the administration of three to five grains of some salicylate for one week of each month for a number of months after the occurrence of an attack. Undoubtedly, as is the case with malaria, the microbes that cause rheumatism lurk somewhere in the system. The salicylates act as antiseptics in the circulation; they kill the bacteria, neutralize toxins, and thus protect the heart. It is well known how liable children are to recurrences of rheumatism and it is also well known how much each recurrence lessens the chance of escape from serious heart complications. This prophylactic treatment therefore should prove a great boon.

Rheumatism and Trauma.—Dr. Jacobi said that while rheumatism is almost certainly microbic in origin, there is no doubt that certain conditions especially predispose to its occurrence. It is worthy of note that there is much more rheumatism of the joints of the lower extremity than of the upper extremity. This seems to be due to the fact that the more frequent occurrence of trauma in the legs provides a lowered resistance where the microbes of rheumatism find a ready lodging. Seventy-five per cent. of the cases of acute rheumatic arthritis occur in the lower extremity. It is important, therefore, to prevent trauma in children who are especially predisposed by heredity or a previous attack to the occurrence of inflammatory rheumatism. Charcot first called attention to this fact and it is a matter of common clinical experience that after fractures and wounds about the fingers, as the result of impediments to the circulation, micro-organisms so often present in the circulation find a

ready lodgment. The same conditions hold for tuberculous osteitis and arthritis. It is not an easy matter to prevent trauma in a healthy boy, but even slight injuries must be taken care of and as far as possible avoided.

The Pharynx and Nose in Rheumatism.—Long before there was question of microbes in rheumatism and their possible entrance through the tonsils, the connection between tonsilitis and rheumatism had been observed by clinicians. Great care should be taken of the throats of children who are liable to rheumatism. Adenoids should be cared for and if any nasal discharge exists it should be treated. Large tonsils should be removed and nasal irrigations should be employed more often than at present. Under the influence of proper nasal irrigation small adenoid growths in the pharynx disappear. For nasal irrigation no syringe or fountain irrigation apparatus should be employed, but simply a cup containing the irrigating solution. The maintenance of a good cutaneous circulation will stimulate the system and relieve a laboring heart. Patients liable to relapses of rheumatism, as those suffering from chronic tuberculosis, whether they be children or adults, should be advised to take a cold sponge bath every morning and then a good rubbing afterward.

Salicylates Not Specifics.—Dr. James J. Walsh said that it must be borne in mind that the idea, originally so prevalent of the salicylates as specific remedies for rheumatism, had been abandoned by most foreign therapeutists. At the Charité Hospital in Berlin, where the salicylates were first introduced, they are no longer employed in the treatment of rheumatism in two out of the three clinics. The salicylates do not influence the course of the rheumatism. They relieve pain, lower the temperature and make the patient comfortable. Prof. Pribram, in his monograph on rheumatism, collects the statistics of parallel series of hundreds of cases treated by the salicylates and by other remedies. Patients treated by the salicylates were not on the average able to leave the hospital any sooner than those treated by other remedies. The salicylates are depressant drugs. To use them for the purpose of prophylaxis against rheumatism would seem to be a mistake. As to the specific microbic cause of rheumatism it is probable that while rheumatism is surely an acute infectious disease it is not due to any form of organism which is at present known. Singer's work, which would seem to make rheumatism a modified pyemia due to attenuated pyogenic germs, has been completely discredited not only by the Vienna school, but by the labors of many other investigators. Widal declared at the last Paris Congress that rheumatism was surely an infection. Fluid taken from the joints of rheumatic cases shows the presence of many polynuclear leucocytes. These cells are an index of Nature's reaction against some infective material. Widal has tried to obtain cultures from the joint fluids of fifteen cases of rheumatism, but without success. The arthritic fluid was put in contact with every medium known to modern bacteriology, yet failed to produce a growth.

Rheumatism a Household Disease.—Dr. Oppenheim said that rheumatism is distinctly a household disease. It is rare to have a single individual suffer from it where many people are living together. In about 70 per cent. of the cases there is an hereditary element in the etiology of rheumatism. Cheadle says that if rheumatism occurs on both sides of the house in the ancestors there is marked tendency to serious, recurring rheumatic storms during life. At the first manifestation of a predisposition to rheumatism the general health should be cared for. It will be found that it is at times when the general health is at a low ebb that rheumatic attacks occur.

Dr. Kerley said that he hesitates about giving the salicylates for prophylactic purposes, because of their tendency to depress. To two patients in whom a marked tendency to the recurrence of rheumatism existed he gave strychnine and iron for alternate weeks with salicylates, but was not satisfied with their action. One of his patients fell ill of rheumatism with severe endocarditis during the course of the week in which he was taking salicylates. He believes that the method suggested by Professor Jacobi of stimulating the system and improving the circulation by douches of cold water, followed by rubbing down, is much more likely to do good.

Dr. Heiman in closing the discussion said that Prudden has shown that the salicylates when taken into the system produce a very definite effect upon the cell protoplasm and prevent the migration of leucocytes. Clinical experience seems to show that it will be of use in preventing rheumatic relapse. Care, of course, must be exercised in giving the drugs, especially where any kidney affection exists. Failure to eliminate the salicylates and their retention in the system lead to their being split up with the production of carbolic acid.

BOOK REVIEWS.

Forty Years in the Medical Profession, 1858-1898. By JOHN JANVIER BLACK, M.D., Member of the College of Physicians, Philadelphia. J. B. Lippincott, Philadelphia.

THIS rather unique book, neither wholly medical nor wholly literary, appeals to us from a very human standpoint. It is the mantle of experience which a wise and observing man is letting slip from his shoulders. The book as its title proclaims, records the personal relations of a busy physician to the discoveries and signs of the times.

Dr. Black had evidently in his youth the picture memory that retained sharply-defined images, and it is with almost photographic clearness that he reproduces the scenes of his student days, the

clinics of Pancoast, Gross and Agnew in Philadelphia, with the strong personality of the men. He has also that seeing eye which is the heritage of experience, and has traced through the rise and progress of bacteriology, antisepsis, serumtherapy, and the multiple new theories of medicine, the true thread of progress. In short, throughout the series of half-essay-like, half-reminiscencing chapters on the medical life of the last half century, he presents in a naive, friendly, quite conversational tone the actual practical benefit that he has derived as a country practitioner, from this progress of medicine. And we cannot help feeling that many a man strained to distraction with new theories, new medicines, and new methods, might find a certain calm and rest in reading this readable book, and discovering among conflicting theories what a common-sense practising physician had tried and had not found wanting.

A Manual of Materia Medica and Pharmacology. By DAVID M. R. CULBRETH, Ph. G., M.D., Professor of Botany, Materia Medica and Pharmacognosy in the Maryland College of Pharmacy; Associate Professor of Materia Medica and Pharmacognosy in the University of Maryland Medical and Dental Schools. Second Edition. Lea Brothers & Co., Philadelphia and New York.

IN the rapidly enlarging scope of the teaching of students of pharmacy and of medicine a number of reliable text-books of the kind under consideration have been published. Culbreth's book represents one of the best of its kind. For the student of pharmacy it is an invaluable guide and no pharmacist should be permitted to practise his profession unless he possessed a thorough acquaintance of the facts which are here gathered. He cannot afford to know less. For the student of medicine, however, the work is not essential, yet it might well serve as a foundation on which to build a structure of future studies. As anatomy is the necessary groundwork for efficient progress in physiology, surgery and a knowledge of abnormal states, so the materials which are utilized in the treatment of a disease should be thoroughly known in their various relationships, botanical or chemical, in order that comprehensive work can be done in the subsequent study of the action of drugs and the application of such activities in the modification of abnormal and aberrant physiological states. From this point of view such a work would be most eminently useful in the first or second year curriculum of a progressive medical school. The revision has been thorough and the information on plant constituents is, for the most part, of recent acquisition and an immense amount of new matter has been added, particularly in the field of the inorganic drugs. This is an especially desirable feature since heretofore it has been in this department that contemporaneous materia medica literature has been weakest.

Manuel Complet de Gynecologie Médicale et Chirurgicale. Par A. LUTAUD. Professeur libre de Gynecologie, Medecin adjoint de Saint-Lazare, Membre fondateur de la Société Obstetricale et Gynecologique de Paris, etc. Nouvelle edition entièrement refondue contenant la technique opératoire complete, et 607 figures dans le texte. Paris: A. Maloine, Editeur, 1900.

THE new edition of Lutaud's well-known work retains not only its reputation among French gynecological treatises, but compares well with the many text-books in our own and the German language. The subdivision of the matter is eminently practical; the anatomy, embryology and pathology of each part of the female sexual tract being considered in a separate chapter. The language throughout is clear and to the point and the descriptions, especially of the operative procedures, are concise and free from ballast. Of operations, only those which have universally found favor are considered in detail and the frequency with which American names are encountered is gratifying. The great stress laid upon asepsis, upon radiography and upon ureteral catheterization, speaks for the modern character of the book. The illustrations hardly come up to those of many of our own works, but those illustrating plastic operations on cervix and vagina are exceptionally good. The pathology, as in so many treatises on this branch of surgery, is deficient. The chapter on Ectopic Gestation is practical and well written. Several pages are devoted to the subject of Artificial Fecundation. On the whole, the book can be most warmly recommended to American students and physicians, the more so since the clearness of the style will not demand a very extensive knowledge of French.

A Manual of Otology. By GORHAM BACON, A.M., M.D., Professor of Otology in Cornell University Medical College, New York. Introduction by CLARENCE J. BLAKE, M.D., Professor of Otology in Harvard Medical School, Boston. Second Edition. Lea Brothers & Co., Philadelphia and New York.

THE second edition of this manual, following so closely on the issue of the first and showing so many points of improvement in what was already a very acceptable and useful volume, has in it all the characteristics of a popular work to be read by the general practitioner when larger works would be neglected, much as Nettleship's "Diseases of the Eye" has displaced the larger books on the same subject. This volume, like the other popular book cited, is handy in size, excellent in type, attractive in presentation and form. The two new plates add a great deal to the value of the book, especially the first, showing the section of the temporal. The coloring of the drum-membranes in the second plate is far from being first-class, yet the plate illustrates